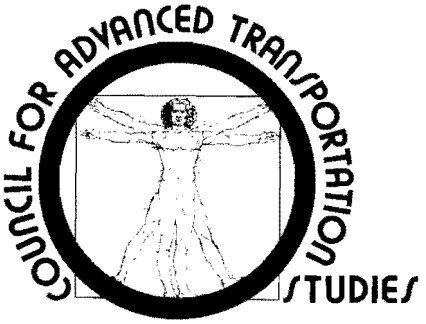
DOT-TST-75-142

THE MARKETING OF PUBLIC TRANSPORTATION: METHOD AND APPLICATION

MARK ALPERT
SHANE DAVIES

RESEARCH REPORT 19

JANUARY 1975



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THE MARKETING OF PUBLIC TRANSPORTATION:

METHOD AND APPLICATION

by

MARK ALPERT

SHANE DAVIES

JANUARY 1975

RESEARCH REPORT

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PREPARED FOR

COUNCIL FOR ADVANCED TRANSPORTATION STUDIES
THE UNIVERSITY OF TEXAS AT AUSTIN
AUSTIN, TEXAS 78712

In Cooperation with

DEPARTMENT OF TRANSPORTATION
OFFICE OF UNIVERSITY RESEARCH
WASHINGTON, D.C. 20590

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT-TST-75-142		

4. Title and Subtitle	5. Report Date
The Marketing of Public Transportation: Method and Application.	January 1975
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
Mark Alpert, Shane Davies	RR 19
9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Council for Advanced Transportation Studies, The University of Texas at Austin, Austin, Texas 78712	00 3655 8
	11. Contract or Grant No.
	DOT OS 30093
	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address	Research Report
Department of Transportation Office of University Research Washington, D.C. 20590	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

This report presents a methodology for determining community desires and attitudes concerning transportation mode selection and design, with an emphasis on improving and marketing public transportation modes.

Empirical data is presented and analyzed for the Austin, Texas area, drawn from 293 respondents representing the general adult community and its leadership. Findings are shown for the key attributes of transportation modes chosen for commuter trips, as well as shopping trips, as seen by potential converts to public transportation. Market profiles are drawn for these "target groups," and marketing strategies are suggested relating the modal features to be stressed, demographic groups appealed to, promotional messages, appropriate communication media, and methods of financing public transportation.

17. Key Words	18. Distribution Statement
Marketing Public Transportation, Discriminant Analysis, Marketing Profiles and Strategies, Media, Financing.	Document is available to the public through the National Technical Information Service, Springfield, Virginia, 22151

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	60	

EXECUTIVE SUMMARY

This report presents a methodology for determining community desires and attitudes concerning transportation mode selection and design, with an emphasis on improving and marketing public transportation modes. Empirical data is presented and analyzed for the Austin, Texas area, drawn from 293 respondents representing the general adult community and its leadership. Findings are shown for the key attributes of transportation modes chosen for commuter trips, as well as shopping trips, as seen by potential converts to public transportation. Market profiles are drawn for these "target groups," and marketing strategies are suggested relating the modal features to be stressed, demographic groups appealed to, promotional messages, appropriate communication media, and methods of financing public transportation.

The Work Trip Market

Of the 252 respondents from the general adult sample, 171 answered the question concerning the mode usually selected for their trips to work or school. One hundred fifty of these people normally travel by car or other non-bus modes, and 42 of them said they would definitely use the mass transit system if it were improved. Thus, roughly one-sixth of the sample may be viewed as high-potential switchers to city mass transit for commuter work trips.

Table 1 presents a descending ranking of the determinance of the 27 characteristics of modes used for transportation to work or school, as rated by the target market of potential switchers to public transportation. In general, both the target and non-target groups shared similar desires for functional attributes such as dependability and brief travel time. However, the switchers seem more concerned with economy, low pollution per passenger, freedom from accidents, low energy use per passenger, and less with fun to drive. The last column of Table 1 summarizes the analysis comparing the perceived image which persons in the target group had of a

TABLE 1

DETERMINANCE SCORES AND MODEL COMPARISONS
FOR POTENTIAL SWITCHERS, WORK/SCHOOL

Rank	Attribute	Z Value	Car or Bus Superior?
1	Dependability	4.59[1]	car[1]
2	Low energy use per passenger	4.41[1]	bus[1]
3	Economy	3.91[1]	bus[1]
4	Low pollution per passenger	3.79[1]	bus[1]
5	Convenience	3.73[1]	car[1]
6	Flexibility	3.33[1]	car[1]
7	Freedom from repairs	2,22[1]	bus[1]
8	Freedom from accidents	2.16[1]	bus[1]
9	No parking problems	2.09[1]	bus[1]
10	Brief travel time	1.82[1]	car[1]
11	Safe from dangerous people	1.67[1]	car[1]
12	Relaxing	.41	n.s.d.
13	Ease of travel with packages	.23	car[1]
14	Avoid traffic congestion	.01	bus[1]
15	Freedom from weather	- .08	car[1]
16	Uncrowded	-1.25	car[1]
17	Privacy	-1.85	car[1]
18	Ability to look at scenery	-1.94	bus[1]
19	Ease of travel with children	-2,02	car[1]
20	Pleasant riding surroundings	-2.18	n.s.d.
21	Ability to read	-2,20	bus[1]
22	Quiet ride	-2.95	car[1]
23	Opportunity to socialize	-3.15	bus[1]
24	Smooth ride	-3.53	car[1]
25	Can listen to radio or tape	-3.88	car[1]
26	Fun to drive	-4,24	car[2]
27	Socially accepted transportation mode	-5,45	car[2]

[1] $p < .05$

[2] $p < .10$

personal car versus a bus for commuter trips. The images are highly distinct, and the bus is seen as superior in several attributes valued by this switcher group.

The switchers, or target market, are relatively younger, have smaller households, and are more likely to shop and work in the downtown area than those less likely to switch to mass transit. Their mean education may also be somewhat higher than non-switchers, but neither income, nor the number of cars in the household, discriminates switchers from non-switchers. The best single place for advertising to potential switchers would be the first or general news section of the local papers, to which a disproportionately high number of target switchers are exposed. The next most effective places to advertise are a university paper, a progressive rock station, a station specializing in "50's and 60's" music, and a progressive country or country rock music time slot. This target group tends to be less exposed to police detective T.V. programs, Dear Abby/Ann Landers, and participation in church organizations.

The Shopping/Personal Business Trip Market

Findings for the shopping/personal business trip sector of the transportation market showed generally the same patterns as those for the commuter market. Of the 252 respondents from the general sample, 241 answered the question concerning the mode usually selected for trips for shopping or personal business. Two hundred twenty of the 241 normally travel by car or other non-bus mode. Approximately one-sixth said they would definitely use the city mass transit system for these trips if it were improved. Table 2 presents a descending ranking of the determinance of the 27 characteristics of modes used for shopping and personal business trips. Like the target commuter market, the target shoppers make modal choices based on criteria such as convenience, dependability, economy, freedom from repairs and parking problems, and ecological considerations, such as energy use and low pollution per passenger. Unlike the commuter group, this group does not determine their choices on the mode characteristics of freedom from accidents and safety from dangerous people. Table 2 shows that ease of

TABLE 2

DETERMINANCE SCORES AND MODEL COMPARISONS FOR POTENTIAL SWITCHERS, SHOPPING/PERSONAL BUSINESS

Rank	Attribute	Z Value	Car or Bus Superior?
1	Convenience	5.06[1]	car[1]
2	Low pollution per passenger	4.41[1]	bus[1]
3 (tie)	Dependability	3.40[1]	car[1]
4 (tie)	Flexibility	3.40[1]	car[1]
5	Economy	3.31[1]	bus[1]
6	Low energy use per passenger	2.86[1]	bus[1]
7	Ease of travel with packages	2.25[1]	car[1]
8	Freedom from repairs	2.09[1]	bus[1]
9	No parking problems	1.59[2]	bus[1]
10	Brief travel time (door-to-door)	1.50[2]	car[1]
11	Avoid traffic congestion	1.06	bus[2]
12 (tie)	Uncrowded	.89	car[1]
13 (tie)	Freedom from accidents	.89	n.s.d.
14	Safe from dangerous people	- .02	n.s.d.
15	Freedom from weather (door-to door)	- .35	car[1]
16	Relaxing	- .87	bus[2]
17	Ease of travel with children	-1.76	n.s.d.
18	Pleasant riding surroundings	-1.90	car[1]
19	Privacy	-2.16	car[1]
20	Smooth ride	-2.39	car[1]
21	Quiet ride	-2.58	car[1]
22	Fun to drive	-2.95	car[1]
23	Ability to read	-3.28	bus[1]
24	Can listen to radio or tape	-3.37	car[1]
25	Opportunity to socialize	-3.47	bus[1]
26	Ability to look at scenery	-3.52	bus[1]
27	Socially accepted transportation mode	-4.10	n.s.d.

[1] $p < .05$

[2] $p < .10$

travel with packages is now determinant, where it was not for commuting. Demographic and media information was also obtained for these groups.

Financing Alternatives for Public Transit

The relative acceptability of financing alternatives for public transit were determined, as well as the comparisons in financing attitudes between the general public and the leaders samples (Table 3). The rank orders correspond fairly closely, although it may be interesting to note that the leaders were more sensitive to property tax subsidies of mass transit (more strongly opposed than the general public) versus a sales tax subsidy (leaders somewhat favorable, general sample somewhat opposed). The significance of the data on financing attitudes is that most "solutions" are opposed by both groups, except for a relative lack of hostility (but not strong support) to tapping the "highways trust fund" for public transportation. Other data in the study indicate that riders are more apt to complain about long waits for buses, inconvenient routes, lack of information about the system, and risk of being stranded, than about bus fares.

TABLE 3

RELATIVE ACCEPTABILITY OF FINANCING METHODS

FOR PUBLIC TRANSPORTATION IMPROVEMENTS

	General Sample		Leaders Sample	
	Mean Attitude[1]	Rank	Mean Attitude[1]	Rank
Would you pay 1 or 2 cents tax/gal. of gasoline with that money going to mass transit?	2.70	1	3.08	3
Riders should pay full costs of service	2.84	2	2,34	1
Riders pay most costs; with balance from gasoline tax revenue	2.92	3	3,20	4
Would you be in favor of a 1/2% increase in the current sales tax with the money collected earmarked for mass transit improvement?	3.22	4	2,88	2
Would you . . .favor paying higher vehicle license plate fees on your personal vehicle with the money . . .for mass transit	3.26	5	3.45	5
"No fare" for riders; mass transit financed by gasoline tax . . .	3.35	6	4.41	7
Riders pay most costs, with balance from tax added to property taxes	3.95	7	4.54	9
Riders pay most costs, with balance from tax on electric bills	4.04	8	3.95	6
"No fare" for riders; mass transit financed by tax added to property taxes	4.12	9	4.80	10
"No fare" for riders; mass transit financed by tax added to electric bills	4.27	10	4,41	8

[1]Definitely Yes=1, Yes=2, Neutral=3, No=4, Definitely No=5

ACKNOWLEDGMENTS

The contents of this research report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Department of Transportation. This report does not constitute a standard, specification, or regulation.

The advice and constructive comments of the following people is gratefully acknowledged:

Joe Ternus, John German, Bill Bullock, Bill Moore and Clyde Malone, Austin Urban Mass Transportation Department;

Richard Lillie, Oliver Wilson, Milton Rube, Tracy Watson and Joshua Farley, Austin City Planning Department;

John Imburgin,
Austin Amtrak Agency;

Lyndon Henry and Philip Sterzing,
Texas Association for Public Transportation;

Harvey Benson,
Duluth-Superior Transit Authority;

Richard Cihoski and Stephen Jacobs,
Head of the Lakes Council of Governments;

Jeff Friedman, Mayor, City of Austin;

and numerous other individuals.

ABSTRACT

This report presents a methodology for determining community desires and attitudes concerning transportation mode selection and design, with an emphasis on improving and marketing public transportation modes.

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INTRODUCTION

The recent recognition of the magnitude of transportation decisions' impact on the environment has prompted increased attention from behavioral scientists, marketing specialists, and government policy-makers (Battberg and Stivers, 1970; Business Week, 1974; Hille and Von Cube, 1963; Mundy, Cravens and Woodruff, 1974). Much from these disciplines may be fruitfully applied to public transportation planning and promotion, but it is important to avoid doing so only after these transportation systems have been adopted. Attempts to change attitudes may unfortunately prove less productive than application of a marketing concept approach, which must start prior to completing the public transportation system and related policies. Under the marketing concept, one attempts to change (or build in) transportation system features which are based on rider and community-determined needs, and then seeks to communicate appropriate messages to various types of potential riders and non-riding supporters of the system.

In addition, rather than making appeals to "the public," it may be productive to first identify those who might be most likely to respond to transportation changes made according to their specific needs, and then move to promotional messages aimed differentially at them as a "target market." This group may contain the major market segment, and their transportation attitudes, media habits, and demographic characteristics may be measured and analyzed to produce an integrated campaign designed to increase their ridership (Kotler, 1972, chapter 6). This report provides information on market segmentation to potential customer/traveler groups, as well as to others whose financial and attitudinal support may be crucial in implementing public transportation system improvements.

A medium-sized city in central Texas (Austin, population 300,000) has been chosen as a study area for a marketing approach to transportation modification. The city is undergoing rapid growth, which will hopefully be managed through community involvement in goal-setting and various current planning activities. As noted above, the study is part of a D.O.T. grant to the University of Texas to study "Transportation to Fulfill Human Needs in the Rural/Urban Environment." While the nature of the community studied tends

to produce some differences from key transportation attributes identified in more urbanized areas, the methodology employed and types of information obtained might prove useful for population center larger and smaller than Austin. For communities having similar characteristics, these data may be particularly useful to:

(1) develop a method for identifying the transportation features or attributes (e.g., ride comfort, flexibility, economy. . .) that determine modal choices for specific trip purposes, such as "to work or school," or "for shopping or personal business";

(2) estimate the percentage of people now using private cars who would be quite likely to switch to a public transportation system if it were improved to suit their needs;

(3) evaluate the attributes of existing low-density modes (cars) and high-density transportation modes (buses) to spot critical gaps between perceived features of buses versus cars, in terms of those attributes that determine modal choices, and recommend ways in which high-density mode features should be changed (or new modes offered) and/or communicated to potential switchers identified in step 2;

(4) indicate appropriate promotional messages to appeal to these potential riders, along with media that effectively reach this group; and

(5) survey both the general adult community and a designated "leaders" group for their attitudes towards public transportation and appropriate means of financing improvements, and provide local officials with a ranking of acceptable financing alternatives for each group, along with suggested public promotional messages for support.

METHODOLOGY

Sample and Data Collection

The findings reported in this paper are drawn mainly from questionnaires administered to a general sample of adults (252 usable responses) and a "city leaders" sample (41 usable responses). Data was obtained between April and June, 1974, and partly reflects the "energy crisis" (for example, energy

use became a key factor in modal choice criteria for some segments of the community).

The data collection methods, cover story, and questionnaires were the same for both groups. The general adults were contacted in a stratified random sample of Austin households by census tract (quotas proportional to population). Interviewers enumerated households within each census tract, with starting points determined by the researchers' selecting random blocks within tracts and random corners and walking directions within blocks. Every third household was approached, with provisions for call-backs, staggered interviewing hours, and alternately selected male and female respondents (18 years and over). Respondents were told this was a study to learn what people want in personal and public transportation, and individual confidentiality was stressed. Due to the length (completion time about 45 minutes) and complexity of some questions for a general sample, interviewers were essential in insuring cooperation and providing clarification of questions. To increase the speed and candor of responses, respondents filled out their own questionnaires, except in those households where translation to Spanish necessitated a more active role by the bilingual interviewers.

The "leaders" sample was obtained by contacting randomly selected names from a list provided by the Austin City Planning Department. The list contained financial people, real estate builders, chamber of commerce members, and other influential types. While it was anticipated that few of these people would be likely switchers to public transportation, their views on planning and financing public transportation must be strongly considered by any taxing authority (e.g., the city council).

Overview of Questionnaire and Data Analysis

Part One of the questionnaire (see Appendix 1) obtained information concerning respondents' traveling frequency for trips to work (or school, if students), mode usually selected, criteria for choosing modes for this trip purpose, and ratings of a car and a bus for these trips. Subjects were asked to assume they were choosing a transportation mode for trips to work or school, and to evaluate 27 modal attributes (e.g., economy, convenience, energy use per passenger . . .) in two distinct ways. Initially,

they were to indicate the relative importance of each attribute on a five-point scale ranging from "no importance" (scored as 1) to "extremely important" (scored as 5). Then, they indicated how much difference they perceived among various transportation modes in terms of each attribute listed. Five-point rating scales were again used, ranging from "no differences" (1) to "extreme differences" (5).

Scales for these importance and difference perceptions were multiplied together for each respective attribute and respondent, to obtain a measure of the "determinance" (Alpert, 1971; Myers and Alpert, 1968) of that attribute. Potential determinance scores for each subject and attribute thus ranged from 1 (no importance, no differences) to 25 (extremely important, extreme differences).

This combining procedure is based on the assumption that the relative weight of a specific attribute in determining whether or not a particular transportation mode is selected is a function of the combined effect of the importance of the attribute to travelers and the amount of perceived variation among alternative modes, in terms of that attribute. For example, avoiding traffic congestion was perceived as important, but it probably lacks determinance because many modes (in Austin) are perceived as equally free from (or subject to) traffic congestion. Accordingly, perceptions of this attribute of local transportation modes probably do not influence modal choices nearly as much as, say, dependability, which has both importance and perceived variation among modes.

After providing these importance and difference perceptions, respondents next rated a personal car along five-point semantic differentials (e.g., Economical:_____:_____:_____:_____: Expensive) to indicate its suitability for these commuter trips in terms of each of the above 27 attributes. This format was also used to secure ratings of a bus's attributes for the same trip purpose.

Data from Part One was used to identify key target switchers to mass transit, as well as their perceptions of needed improvements in mass transit (currently synonymous with buses). The "target market" was operationally defined as those persons who travel to work or school and do not now use the city bus (or the University shuttle bus), but who indicated "definitely yes"

when asked in a later question if they would use city mass transit for trips to work or school if it were improved. Current bus patrons are important, but neither they nor people who do not normally travel to work or school provide the opportunity for increased patronage which is represented by the target group.

Having identified a segment of potential switchers to public transportation and having computed their determinance scores, one can examine perceived differences between buses versus cars, in terms of attributes that determine their transportation decisions. Gaps between non-determinant attributes are not worth concentrating upon because these perceptions have a weaker influence on modal choices. However, gaps along determinant attributes may point to needed changes in the features of buses (or other modes that can embody the attributes sought by the potential switchers), as well as attributes that need stress in promotion to potential switchers.

Part Two allows the same kinds of determinant attribute analysis, this time with trips for shopping or personal business. Certain attributes, such as "ease of travel with children," may here obtain determinance where previously it was lacking. In addition, different types of people may become the target market. In this report, we shall first concentrate on the commuter trip market. The cost-benefit of increased patronage in this sector is more dramatic than for shopping/personal business trips due to the critical role commuter trips play in determining freeway, bridge, and tunnel expenditures. A conversion to higher rider density per vehicle in this market may thus be more important, although the need for public transportation improvements in the other trip categories is non-trivial. These latter categories will be examined following the discussion of the commuter trip market.

Part Three measures attitudes toward financing public transportation, as well as transportation's role in city planning, pollution, and so forth. This part also contains the "would you use city mass transit if improved . . ." questions discussed above, and probes for specific complaints concerning the current bus system.

Part Four measures respondents' exposure to various general media (newspapers and sections, clubs, . . .), as well as specific stations and

times during which they normally listen to radio or watch t.v. Information from this section helps develop specific media campaigns to reach target switchers, leaders, or "the general public", depending on what action regarding patronage or financial support is being sought.

Part Five measures basic demographic information (sex, age, income . . .), along with shopping and work patterns. This data can be used to identify profiles of switchers (or other groups, such as "leaders"), infer their needs and the communicators with whom they might identify, and thereby help to design more effective promotional messages.

THE WORK/SCHOOL TRIP MARKET

Of the 252 respondents from the general adult sample, 171 answered the question concerning the mode usually selected for their trips to work or school. One hundred fifty of these people normally travel by car or other non-bus modes, and 42 of them said they would definitely use the city mass transit system if it were improved. Thus, roughly one-sixth of the sample may be viewed as high-potential switchers to city mass transit for commuter trips. Since the system now gets some three to five percent of local trips, there is reason to hope for potential improvement even if less than one-sixth of the city can actually be converted.[1] While the proportion of switchers is probably overstated, these people can be taken as representative of the potential switchers in the area surveyed, since the sample was randomly contacted and potential switchers may have characteristics similar to the population of adults in the city as a whole.

Table 1 presents a descending ranking of the determinance of the 27 characteristics of modes used for transportation to work or school, as rated by the target market of potential switchers to public transportation. The "z-values" represent the comparison of the mean determinance rating for each attribute with the mean for all attributes, adjusting for the standard deviation of these ratings, and the number rating each attribute.[2]

The determinant attributes for the target group should be stressed in obtaining their patronage of public transportation, while those not deter-

mining choices would probably not be worth spending money on improving and/or promoting. The key attributes appear generally like those of other studies (Hille and Martin, 1967; Hille, et al., 1968; Mundy, Cravens and Woodruff, 1974), with some interesting and possibly important differences in this market. An example of a possible important difference is safety from danger-our people. Commonly researched (and expensive) ride characteristics such as ride quality and quietness may not be determinants for those commuters likely to switch from cars to mass transit. This does not mean that these elements should be ignored, and it is probable that improvements beyond a basically adequate level of comfort and quiet are potentially less useful than stress on more valued commuter mode features.

In order to appeal to potential switchers, public transportation would need to incorporate satisfactory levels of the 11 determinant attributes noted in Table 1. For explanatory insight, and some idea of future trends, it is worth noting that although a multiple discriminant analysis (Veldman, 1967) of the target group versus the non-switchers, in terms of determinance profiles, does not show an overall difference (Wilks' Lambda significant at $\alpha = .33$), the patterns of similarity and differentiation are intuitively reasonable. In general, both groups shared similar desires for functional attributes such as dependability and brief travel time. However, the switchers seem more concerned with economy ($\alpha = .07$), low pollution per passenger ($\alpha = .07$), freedom from accidents ($\alpha = .07$), low energy use per passenger ($\alpha = .01$), and less with fun to drive ($\alpha = .01$).

The last column of Table 1 summarizes the analysis (t-tests with repeated measures) comparing the perceived image which persons in the target group had of a personal car versus a bus for commuter trips (Veldman, 1967). The images are highly distinct, and the bus is seen as superior in several attributes valued by this switcher group. If progress can be made in closing gaps for dependability, convenience, flexibility, travel time, and safety from dangerous people, while stressing the perceived advantages in economy, "hassle-freedom," and "societal factors," significant market penetration might ensue. Deviations from fixed-route, fixed-time service, involving dial-a-ride, park-and-ride, and car-pooling incentives, show promise in providing a better mix of attributes for satisfying this segment. Moreover,

TABLE 1

DETERMINANCE SCORES AND MODEL COMPARISONS
FOR POTENTIAL SWITCHERS, WORK/SCHOOL

Rank	Attribute	Z Value	Car or Bus Superior?
1	Dependability	4.59[1]	car[1]
2	Low energy use per passenger	4.41[1]	bus[1]
3	Economy	3.91[1]	bus[1]
4	Low pollution per passenger	3.79[1]	bus[1]
5	Convenience	3.73[1]	car[1]
6	Flexibility	3.33[1]	car[1]
7	Freedom from repairs	2.22[1]	bus[1]
8	Freedom from accidents	2.16[1]	bus[1]
9	No parking problems	2.09[1]	bus[1]
10	Brief travel time	1.82[1]	car[1]
11	Safe from dangerous people	1.67[1]	car[1]
12	Relaxing	.41	n.s.d.
13	East of travel with packages	.23	car[1]
14	Avoid traffic congestion	.01	bus[1]
15	Freedom from weather	- .08	car[1]
16	Uncrowded	-1.25	car[1]
17	Privacy	-1.85	car[1]
18	Ability to look at scenery	-1.94	bus[1]
19	Ease of travel with children	-2.02	car[1]
20	Pleasant riding surroundings	-2.18	n.s.d.
21	Ability to read	-2.20	bus[1]
22	Quiet ride	-2.95	car[1]
23	Opportunity to socialize	-3.15	car[1]
24	Smooth ride	-3.53	car[1]
25	Can listen to radio or tape	-3.88	car[1]
26	Fun to drive	-4.24	car[2]
27	Socially accepted transportation	-5.45	car[2]

[1] $p < .05$

[2] $p < .10$

even conventional bus systems may be viable in this segment, given increasing federal support (Business Week, 1974), shifts in people's determinance profiles, and the relative advantages of mass transit versus cars.

Demographics

Can marketing efforts be effectively focused on people who seek the above combination of attributes? Comparing the target group with the rest of the general sample, in terms of demographic variables and work/shopping location characteristics, produced a Wilks' Lambda significant at $\alpha = .02$ (See Table 2). The significantly discriminating variables indicated that switchers may be relatively younger (mean age about 30 versus 35), have small households, are more likely to be full-time or part-time students (although 60 percent are non-students), and are more likely to shop and work in the downtown area than those less likely to switch to mass transit. Their mean education may also be somewhat higher than non-switchers ($\alpha = .14$), but neither income ($\alpha = .74$), nor the number of cars in the household ($\alpha = .40$), discriminates switchers from non-switchers. Unlike current riders (an essentially "captive" market), switchers have the option of auto transportation but may choose mass transit for other reasons, relating perhaps to their educational backgrounds and value-systems, if given a reasonably efficient alternative to personal cars.

Media

Tables 3, 4, and 5 summarize the comparative media exposure habits of the target switcher-group (for work/school trips) versus those for the rest of the general adult sample. Exhibit 1 provides descriptions of radio programming content. While media categories, particularly specific time slots, are too numerous to mention here, some highlights for directing messages for the switcher-group can be noted.

Table 3 ranks the general types of media, according to the percentage of the target group who were operationally defined as "usually exposed" to each type. Specific stations and time slots are similarly ranked in Table 4. The best single place for advertising to potential switchers would be the

TABLE 2

DEMOGRAPHIC PROFILES

Variable	Switchers Mean	Non-Switchers Mean	F-Ratio
Sex (1=M, 2=F)	1.4857	1.5041	.0364
Marital Status (1=Single, 2=Married, 3=Other)	1.6571	1.8017	1.5838
Student Status (1=Full time student, 2=Part time student, 3=Not student)	2.2000	2.6529	9.8540[1]
Age (1=<21, 2=21-29, 3=30-44, 4=45-59, 5=>60)	2.3429	2.6694	2.8459[2]
Household Size (1=1, 2=2, 3=3, 4=4, 5=5)	2.3143	2.9421	6.4850[1]
Education (1=Jr Hi, 2=Hi sch, 3=Hi sch grad, 4=College/Prof. train, 5= Coll. grad)	4.2286	3.9421	2.1603
Income (1=<5000, 2=5000-9999, 3=10,000-14,999, 4=15,000-19,999, 5=>20,000)	2.3714	2.4545	.1145
# of Autos (1=None, 2=1, 3=2, 4=3→)	2.4857	2.6198	.7145
Time in Austin (1=<6 mo, 2=6 mo-1yr, 3=1-3yr, 4=3-5yr, 5=5yr→)	3.8286	4.1570	2.2219
Work Downtown (1=Yes, 2=No)	1.5714	1.7355	3.5066[2]
Shop Downtown (1=2/wk, 2=2-3/mo, 3=1/mo, 4=every 2-3mo, 5=almost never)	3.5714	4.1157	4.6893[1]
Shop Highland Mall (same scale as above)	3.2000	3.2562	.0527
Shop Hancock Center (same scale as above)	3.8000	3.4793	2.687
Shop Southwood Center (same scale as above)	4.4571	4.3719	.1497

[1] $p < .05$

[2] $p < .10$

TABLE 3

RANKED GENERAL MEDIA EXPOSURE, WORK/SCHOOL

Media Type	Percent of target exposed	Percent of non-target exposed
1. General news-list section of newspaper	81.4	81.1
2. TV news programs	69.7	64.8
3. Movies (TV)	62.8	66.8
4. Radio news programs	60.5	62.8
5. Daily Texan	51.2	19.9
6. Entertainment section of newspaper	48.8	42.4
7. "Top 40" music (Radio)	37.2	31.6
8. "Easy Listening" music (Radio)	37.2	35.2

TABLE 4

HIGHEST RANKED MEDIA SLOTS, WORK/SCHOOL SWITCHERS

Station Time Slots	Percent of target exposed	Percent of non-target exposed
1. KVUE (TV) 6-10 pm	48.8	39.3
2. KTBC (TV) 6-10 pm	48.8	49.5
3. KTVV (TV) 6-10 pm	41.9	40.8
4. KVUE (TV) 10 pm on	27.9	14.3
5. KTBC (TV) 4-6 pm	25.6	18.9
6. KTBC (TV) 10 pm on	25.6	20.9
7. KTVV (TV) 10 pm on	23.3	17.9
8. KLRN (TV) 6-10 pm	18.6	11.7
9. KVET 6-10 pm	18.6	7.1
10. KRMH 10 pm on	18.6	6.6
11. KLBJ-AM 7-9 am	18.6	11.7
12. KNOW 7-9 am	16.3	12.8
13. KNOW 4-6 pm	14	8.2
14. KNOW 6-10 pm	14	8.2
15. KLBJ-FM 10 pm on	14	5.1
16. KOKE 6-10 pm	14	5.1

TABLE 5

DISCRIMINATING MEDIA, WORK/SCHOOL*

Media	Percent of target exposed	Percent of non-target exposed	Probability
Daily Texan	51.2	19.9	.0001
Ann Landers/Dear Abby	20.9	40.8	.014
Police Detective TV Programs	20.9	37.2	.039
Church organizations	18.6	36.7	.021
KLBJ-AM 4-6 pm	9.3	3.1	.061
KLBJ-FM 4-6 pm	11.6	4.1	.046
KLBJ-FM 10 pm on	14	5.1	.033
KOKE	23.3	11.2	.034
KOKE 6-10 pm	14	5.1	.033
KHFI noon-4 pm	4.7	0	.003
KRMH	27.9	14.8	.037
KRMH 10 pm on	18.6	6.6	.012
KVUE-TV 10 pm on	27.9	14.3	.028
KTVV-TV 6-10 pm	18.6	7.1	.018

	F-value target exposed	F-value non-target exposed	Probability
*Read Magazines (1=don't read at all, 2=1-30 minutes, 3=31-60 minutes, 4=over 1 hour)	2.44	2.02	.004

EXHIBIT 1 - Description of Local Radio Programming

Radio Log

KNOW (1490 kc)—Top 40 music; news at five minutes before the hour; weather on the hour; 24 hours daily.

KOKE (1370 kc)—Modern country music; news and weather on the hour; "Skywatch Austin" traffic reports morning and afternoon; live reports from National Weather Service 7:20 a.m. and 12:15 p.m.; "Arleigh Duff Show" 10 a.m. to noon; 6 a.m. to local sunset.

KLBJ (590 kc)—Local, regional news; CBS news; easy listening music; CBS Radio Drama at 9:07 p.m. nightly; 5 a.m. to 1:06 a.m. Monday-Friday; to 12:58 a.m. Saturday-Sunday.

KIXL (970 kHz) Middle-of-the-road popular and standard music; ABC news on the hour; local and state news at 6, 6:30, 7, 8 and 10:30 a.m.; 12:20, 4:30, 5, 5:30 and 6:05 p.m.; Howard Cosell Sports at 7:45 a.m. and 5:45 p.m.; "Austin Today," news, interviews and public affairs 12:20-1 p.m.; commentary by Harry Reasoner, Howard K. Smith and Edward P. Morgan with Frank Gifford Sports 6:10-6:30 p.m.

KVET (1300 kc)—Country western music; news at 13 minutes after the hour; First Baptist Church services Sunday at 11 a.m.; 24 hours daily.

FM STATIONS

KASE-FM (100.7)—Big Band stereo music; news on the hour; 24 hours daily.

KHFI FM (98.8)—Hit parade of golden sounds of music from 1955 to the present; 24 hours daily; news at :20 and :40 after the hour; weather at :10 and :50 after the hour.

KMFA-FM (89.5) — Classical music in stereo 1 p.m. to midnight daily.

KOKE-FM (95.5) — Progressive country music in stereo 18 hours daily, 10 a.m. to 4 a.m.; Texas State Network news at five minutes before the hour; "Buenos Dias Spanish Program" 6 to 10 a.m. daily.

KRMH-FM (103.7) Contemporary music in quadraphonic-stereo; news and weather at :25 past the hour; Art Young 6-9 a.m., music-news-information, with newsmaker or celebrity interview 8-9 a.m. 24 hours daily.

KLBJ-FM (93.7) — Progressive contemporary music; news at :20 past the hour; 6 a.m. to 1 a.m. Monday-Saturday; 8 a.m. to 1 a.m. Sunday.

KUT-FM (90.7) — National and ABC Radio Networks; "Eklektikos," classical music 6-8 a.m., 9 a.m. to noon; jazz 7 to 9 p.m.; "El Desbelador" (Spanish language programing) 9 to 11 p.m.; "Soul on Ice" 11 p.m. to 2 a.m.; "All Things Considered," newsmagazine of the air, 5:30 to 7 p.m. Saturday: 1 p.m. opera, 6 p.m. jazz. Sunday: 6 a.m. sacred concert; 1 p.m. "Concert of the Week"; 11 p.m. City Council meetings live Thursday at 7 p.m. From 6 a.m. to 2 a.m. daily.

Source: Entertainment Section of Austin American Statesman January 6, 1975.

first or general news section of the Austin American Statesman, provided print, sound, and visual formats are equally effective, and assuming certain cost considerations. A comprehensive media strategy program is beyond the scope of this report, although developing one would be enhanced by the media exposure data in Tables 3-5, and 10-12. More detailed information on the considerations involved in developing such a program may be found in the articles by Gensch (1968, 1970).

Normally a firm would choose media that most effectively reach the target market, taking into account the cost per exposure, media effectiveness, and media overlap. Where the costs per thousand (in the audience) are comparable, information such as that in Table 5 would influence the choice of media that reach a greater percentage of the target group than the general population, for this would produce a lower cost per exposure to target customers. Media costs are usually proportionate (within types) to the size of the audience. Hence one is usually better off choosing a time slot with a smaller audience (but disproportionately high in target customers) than a one with a larger audience (even in the target market, but also even larger in the non-target group), given that costs are higher in the second slot.

In addition to this principle, one would generally consider the costs of each time slot (or section of paper, size of ad versus exposure, etc.), and adjust by the penetration indicated in Tables 3 and 4. If, for example, the cost of a message placed in the first section of the American Statesman newspaper (reaching 81.4% of the target customers) were twice as great as an advertisement in the Daily Texan, more dollars should be allocated to Daily Texan ads. Time slots could also be chosen by concentrating on those that produce the greatest numbers of target customers per advertising dollar (indexed by the cost of the ad, divided by the percentage in target "exposed").

Of course, with a "public interest" product such as public transportation, considerable donated time might be expected from media (public interest/FCC considerations). Given "free" media time (or space), Tables 3 and 4 are more directly applicable to media scheduling than the differences noted in Table 5. For a combination of free and paid-for-media, the three tables should be used in concert with cost data from local advertising agencies.

Initially, the data in Tables 3 and 4 suggest messages be placed in media such as the general news section of the local paper, near T.V. news programs, T.V. movies (if cost feasible), and the other spots indicated by the rankings.

Table 5 suggests additional advertising spots. Media in which a disproportionately high number of target switchers are exposed include: the Daily Texan (the university paper, which the data indicates may also be read by target customers who are non-students but have household members who are students, by faculty, and by ex-students settling in Austin); a "progressive rock" station (KRMH, especially at night); a station (KHFI-FM) specializing in "50's and 60's" (á la "American Graffiti"), and "progressive country" or "country rock" music time slot. Compared to the low potential switcher, the target group tend to be less exposed to police detective T.V. programs, Dear Abby/Ann Landers, and church organizations. Inferences concerning their relative values and life styles may also arise from these media data.

The high proportion of readers of the university paper, plus a disproportionate number of students in the target market raises the question of whether there are two segments within the target group. However, attempting to discriminate between students and non-students in the target group, based on determinance scores, yields a 97% probability that they seek the same attributes. Demographically, the non-student switchers have more education and are older, but tend to work and shop in the same parts of town as do the students. Hence this segment is relatively homogeneous and may respond to similar appeals for patronage. If students wanted different transportation features than the non-student potential switchers, it might be risky to design a unique system for them. This might dilute the promotional and system improvement effects, and the two sub-markets might have conflicting needs. Further, improvements in the route structure of the university shuttle bus system might take away the student segment.[3] However, given the relative homogeneity of the switcher group, those risks are minimized, and a consistent set of changes and messages may be undertaken. Financing several of the needed changes and promotional campaigns for public transportation may be approached in several ways. Prior to dis-

cussing the findings relevant to this matter, let us consider the data and recommendations put forth for the second major travel-purpose segment: Shopping and personal business trips.

SHOPPING/PERSONAL BUSINESS TRIPS

Findings for the shopping/personal business trip sector of the transportation market generally showed the same patterns as those for the commuter market, with respect to target customers, features sought, improvements needed, and media exposure. Where differences occurred, they were generally in hypothesized and intuitively reasonable directions. In the following sections, we shall present summary tables, similar to those previously presented, as well as a discussion of their implications for public transportation in the shopping/personal business trip sector.

Of the 252 respondents from the general sample, 241 answered the question concerning the mode usually selected for trips for shopping or personal business, in contrast to 171 answering the similar question for commuter trips. Nearly all of the respondents thus indicated a usual demand for shopping or personal business trips, while a number may not commute due to neither working (outside the home) nor going to school. Two hundred twenty of the 241 normally travel by car or other non-bus mode, but 41 of them said they would definitely use the city mass transit system for these trips if it were improved. This fraction represents about one-sixth of the respondents as potential converts to the city transit system, this time for non-commuter trips, although the same caution should again be taken in viewing this fraction as a market potential. They are more of a target group, and can be taken as representative of others in the survey area who might also switch to public transportation for these trips, if it is adequately improved and communicated to them.

Twenty-three of the 252 respondents appear as potential switchers to public transportation for <u>both</u> commuting and non-commuting trips, and some degree of overlap is reasonable given the attitudes and values of potential switchers. Eighteen new people appear on the switcher-list for non-com-

muting trips, perhaps due to differences in their travel habits, economic conditions, or other factors. Some persons are willing to switch for one trip purpose, some for another type, and some for both types. The fact that the two target groups are not identical suggests different demographic and media profiles for the two segments, along with potentially differing determinant attributes sought from transportation modes. These will be discussed below.

One final observation at this point is that while the same fraction of the general respondents (one-sixth) appears "most likely to switch" to public transportation for each of these differing trip-types, the public transportation system may be potentially less competitive in the non-commuter segment. A greater proportion of non-commuters indicated they would switch (42 out of 171) than of non-bus shopping/personal business travelers (41 out of 241). This suggests that non-commuting travel patterns and sought features may be harder to satisfy with public transportation, and the Austin community switching-intentions confirm this intuitively expected finding. Three points are relevant here. First, the non-commuter market is still an important sector to satisfy (although not as crucial as the "peak" commuter one), due to a need for public transportation for non-commuting persons who cannot or may not choose to use private transportation. This group is rapidly enlarging to include potentially liberated housewives who might more easily be freed from their "crypto-servant," chauffer status, if public transportation were more adequate to ferry children to and from school, music lessons, boy and girl scouts, and homes, rather than requiring parental (usually female) picking up and dropping off. Second, it is important for the public transportation system to improve load factors during off-peak times, for this is where excess capacity is likely to be greatest, and labor and vehicle costs are likely to be more efficiently applied if this is reduced. Third, just as in the commuter market, it is important to orient improvement of features, promotion, etc., towards those target customers most likely to switch to public transportation for shopping/personal business trips. Appealing to these people, and the attributes they deem important for transportation, is likely to bring more results than a general attempt to please "the public" which may want different attributes, and/or

is likely not to respond to promotional messages beamed broadly in too diverse media slots.

Determinant Attributes for Shopping/Personal Business Modal Choice

Table 6 presents "z-values" and bus versus car image comparisons in the same manner as Table 1 illustrated for commuter trips. As noted above, this switcher-group values a similar pattern of attributes as do the potential switching commuters, with some exceptions. Like the target commuter market, the target shoppers make modal choices based on criteria such as convenience, dependability, economy, freedom from repairs and parking problems, and ecological considerations such as energy-use and low pollution per passenger. Unlike the commuter group, this group does not determine their choices on the mode characteristics of freedom from accidents and safety from dangerous people. The former probably reflects the lower traffic density for these types of trip purposes, and the latter may lack determinance due to shopping/personal business trips taking place during daylight hours. More commuting may occur during early morning or late evening hours, during which times safety from dangerous people may be a more crucial consideration. The lack of determinance of these two attributes is also shown by the lack of significant differences in the perceived profiles of bus versus car, in terms of these characteristics (whereas in the commuter segment the modes were seen to differ in these traits).

In addition to these two features that lack determinance for target switchers in the shopping market, Table 6 shows that "ease of travel with packages" is now determinant, where it was not for commuting. This is indeed reasonable, given the trip purpose, and the table also shows that this is one of the determinant attributes in which the bus is judged inferior to a private car. (The right column summarizes the statistical comparisons of images, such as were discussed for commuters). To more adequately meet the needs of potential bus-riding shoppers, the public mode(s) should improve in this trait. Buses might be improved with lower step-ups and slower-closing doors (or promotional messages might stress the fact that buses now have package racks and wide, slower-closing doorways, if riders perceive buses to lack these attributes.) Alternative public modes, such as dial-a-ride, might combine the

TABLE 6

DETERMINANCE SCORES AND MODAL COMPARISONS FOR POTENTIAL SWITCHERS, SHOPPING/PERSONAL BUSINESS

Rank	Attribute	Z Value	Car or Bus Superior?
1	Convenience	5.06[1]	car[1]
2	Low pollution per passenger	4.41[1]	bus[1]
3 (tie)	Dependability	3.40[1]	car[1]
4 (tie)	Flexibility	3.40[1]	car[1]
5	Economy	3.31[1]	bus[1]
6	Low energy use per passenger	2.86[1]	bus[1]
7	Ease of travel with packages	2.25[1]	car[1]
8	Freedom from repairs	2.09[1]	bus[1]
9	No parking problems	1.59[2]	bus[1]
10	Brief travel time (door-to-door)	1.50[2]	car[1]
11	Avoid traffic congestion	1.06	bus[2]
12 (tie)	Uncrowded	.89	car[1]
13 (tie)	Freedom from accidents	.89	n.s.d.
14	Safe from dangerous people	- .02	n.s.d.
15	Freedom from weather (door-to-door)	- .35	car[1]
16	Relaxing	- .87	bus[2]
17	Ease of travel with children	-1.76	n.s.d.
18	Pleasant riding surroundings	-1.90	car[1]
19	Privacy	-2.16	car[1]
20	Smooth ride	-2.39	car[1]
21	Quiet ride	-2.58	car[1]
22	Fun to drive	-2.95	car[1]
23	Ability to read	-3.28	bus[1]
24	Can listen to radio or tape	-3.37	car[1]
25	Opportunity to socialize	-3.47	bus[1]
26	Ability to look at scenery	-3.52	bus[1]
27	Socially accepted transportation mode	-4.10	n.s.d.

[1] $p < .05$

[2] $p < .10$

package-handling convenience of cars, as well as several other combinations of attributes of buses and cars.

Thus the promotional and service-improvement implications of Table 6 are similar to those that Table 1 had for the commuter market. Public transportation has perceived (by the target group) advantages in the determinant attributes of economy, "hassle-freedom," and ecology, all of which may be effective elements of promotional message strategy. However, it will be necessary to noticeably improve on current determinant attribute deficiencies in convenience, dependability, travel time, flexibility, and package-handling ease. Together with the suggestions made above, shorter headways and better routing might enable market gains in ridership, provided these are directed towards the target customers, both geographically and via appropriate promotional media (to be discussed below).

Demographics

Table 7 summarizes the comparison of demographic variables and work/shopping location characteristics profiles of the target group with the rest of the general adult sample. These profiles are even more distinct than for the commuter switcher versus non-switcher comparison (Wilks' Lambda significant at $\alpha = .0002$). Some of the same distinctions of the switcher group are again relevant to this segment of the travel market, although there are some changes. As in Table 2, the right column presents the univariate F-ratios (for two group ANOVA, equivalent to the square of the t-test ratio).

These comparisons indicate that switchers may be more likely to shop downtown than non-switchers, which was also true for the commuter target group. However, this group is not more likely than the non-switcher group to work downtown. Like the commuter switchers, this target group has relatively small families and is more student-oriented than the non-switchers, although again over 60 percent (here 64 percent) are non-students.

Unlike the commuter target riders, this group is not different from the rest of the community in age or time in Austin (on which the former group was somewhat low). They are significantly lower in family income and in number of cars per household, neither of which discriminated the commuter

TABLE 7

DEMOGRAPHIC PROFILES

Variable	Switchers Mean	Non-Switchers Mean	F-Ratio
Sex (1=M, 2=F)	1.575	1.4741	1.2042
Marital Status (1=Single, 2=Married, 3=Other)	1.7	1.7931	.7163
Student Status (1=Full time student, 2=Part time student, 3=Not student)	2.325	2.6293	4.7217[1]
Age (1=<21, 2=21-29, 3=30-44, 4=45-59, 5=>60)	2.55	2.6121	.1107
Household Size (1=1, 2=2, 3=3, 4=4, 5=5)	2.45	2.9224	3.9591[1]
Education (1=Jr Hi, 2=Hi sch, 3=Hi sch grad, 4=College/Prof. train, 5= Coll. grad)	3.775	4.0862	2.8057
Income (1=<5,000, 2=5,000-9,999, 3=10,000-14,999, 4=15,000-19,999, 5=>20,000)	1.875	2.6293	11.0699[2]
# of Autos (1=None, 2=1, 3=2, 4=3→)	2.25	2.7069	9.6067[2]
Time in Austin (1=<6 mo, 2=6 mo-1yr, 3=1-3yr, 4=3-5yr, 5= 5yr→)	3.95	4.1293	.7185
Work Downtown (1=Yes, 2=No)	1.675	1.7069	.1420
Shop Downtown (1=2/wk, 2=2-3/mo, 3=1/mo, 4=every 2-3mo, 5=almost never)	3.25	4.25	18.6769[2]
Shop Highland Mall (same scale as above)	3.425	3.181	1.0950
Shop Hancock Center (same scale as above)	3.65	3.5172	.3843
Shop Southwood Center (same scale as above)	4.175	4.4655	1.9268

[1] $p < .05$

[2] $p < .01$

target switchers. Demographically, we might characterize this group of potential switchers to public transit for shopping trips as needing alternatives to cars, whereas the first target group had more discretion. These switchers seem also to be motivated by their greater downtown shopping frequency, although they still do so infrequently (about 1/month versus the non-switchers' every 2-3 months). Given more effective public transportation, this frequency might increase, and this has of course motivated downtown support of public transportation. Promotional appeals to this switcher-group might stress the appropriateness of shopping by public transportation in removing the need for a second car (they average about 1 1/4 cars/household), as well as the economy and other attributes mentioned above.

Media

How can the target customers for shopping/personal business travel be effectively reached? Tables 8-10 provide the same kinds of media exposure data as the earlier discussed Tables 3-5. Given the availability of donated media space (or time) previously discussed, the messages could be placed on those media ranked highest in exposure for the target customers, independent of the differential exposure between target and non-target groups (provided of course that messages do not antagonize non-target persons who would also be reached). Media candidates for "free exposure" attempts would be similar to those cited before, including the general news section of the American Statesman, T.V. news programs, prime-time T.V. (all three networks), and T.V. movies. In addition, the target group is highly exposed to the Daily Texan and frequently listens to classical music (not true of the commuter target market, who may not be home as often during the day), both media in disproportionate numbers relative to the non-switchers. Dollars spent to promote in these media, if rates are assumed proportionate to audience size, would be relatively more efficiently allocated than those for media that are high in both target and non-target exposure.

The data in Table 10 are particularly useful in modifying the simple ranked general media of Table 8 and time-slots of Table 9, for it lists those media to which the target audience is differentially exposed. Where exposure

TABLE 8

RANKED GENERAL MEDIA EXPOSURE, SHOPPING/PERSONAL BUSINESS

Media Type	Percent of Target Exposed	Percent of Non-target Exposed
1. General news (1st section of newspaper)	85	80.4
2. Watch T.V. news programs	70	64.8
3. Watch movies (T.V.)	65	66.3
4. Radio news programs	60	62.8
5. Daily Texan	47.5	21.1
6. Entertainment section of newspaper	45	43.2
7. Newspaper comics	40	36.2
8. Listen to classical music	40	23.6

TABLE 9

RANKED MEDIA EXPOSURE (Specific Slots),
SHOPPING/PERSONAL BUSINESS

Variables	Percent Target Exposed	Percent Non-target Exposed
1. KTBC (TV) 6-10 pm	39	51.5
2. KVUE (TV) 6-10 pm	36.6	41.9
3. KTVV (TV) 6-10 pm	31.7	42.9
4. KVUE (TV) 10 pm on	24.4	15.2
5. KTVV (TV) 10 pm on	19.5	18.7
6. KTBC (TV) 10 pm on	19.5	22.2
7. KTBC (TV) 4-6 pm	17.1	20.7
8. KTVT (TV) 6-10 pm	17.1	7.6
9. KRMH-FM 10 pm on	17.1	7.1
10. KLBJ-AM 7-9 am	17.1	12.1
11. KLBJ-FM 10 pm on	14.6	5.1
12. KLRN (TV) 6-10 pm	14.6	12.6
13. KMFA-FM 10 pm on	12.2	2.5
14. KOKE-FM 10 pm on	12.2	4.6

TABLE 10

DISCRIMINATING MEDIA, SHOPPING/PERSONAL BUSINESS*

Variable	Percent of Target Exposed	Percent of Non-target Exposed	Probability
Daily Texan	47.5	21.1	.001
Classical Music	40	23.6	.03
KLBJ AM 6-10 pm	9.8	3	.048
KMFA FM 7-9 am	2.4	0	.026
KMFA FM 6-10 pm	4.9	.5	.021
KMFA FM 10 pm on	12.2	2.5	.005
FUT FM 4-6 pm	7.3	1.5	.029
KLBJ FM 10 pm on	14.6	5.1	.024
KOKE FM 7-9 am	7.3	1.5	.029
KOKE FM 10 pm on	12.2	4.6	.055
KRMH FM 10 pm on	17.1	7.1	.037
KVUE TV 4-6 pm	2.4	15.2	.026
KLRN TV 9 am-noon	4.9	0	.002
KTVT TV 9 am-noon	4.9	.5	.021
KTVT TV 6-10 pm	17.1	7.6	.053
KWEX TV 7-9 am	2.4	0	.026

---

*	F-Value of Target Exposed	F-Value of Non-target Exposed	Probability
Read magazines (1=don't read at all, 2=1-30 minutes, 3=31-60 minutes, 4=over 1 hour)	2.475	2.015	.003
Watch T.V. (0=don't watch TV, 1=1-60 minutes, 2=1-3 hours, 3=over 3 hours)	2.525	2.864	.029

is differentially high, and absolutely high as well, messages would be especially well-placed. Media of this type would include the Daily Texan, a nighttime progressive-rock radio slot (KRMH-FM and KLBJ-FM), a nighttime classical music slot (KMFA-FM, which does not accept ads but might give a "plug"), and a nighttime country-western music slot (KOKE-FM). Table 12 also shows that a disproportionately large percentage of the target group watch a particular T.V. station in prime-time (KTVT), where its programming is mostly movies and reruns (not a major network station). The differential effectiveness of T.V. advertising for public transportation has not been quantified, and some judgment must be made concerning the per dollar effectiveness of such advertising. Even given donated media time, the difference in costs of televisual versus radio versus printed copy should also be taken into account. Given the high impact of T.V. advertising for a number of products and services, future research on the comparative impact of this medium for public transportation would be useful (and would be aided by funding support for copy preparation and presentation over media, under controlled experimental conditions). For the present, initial promotional messages are probably best conveyed by radio and local print media, choosing slots from data such as presented in Tables 8-10. As noted above, the percentage of target group exposure for each slot should be modified to account for differences in cost per unit of advertising placed in each slot, effectiveness of the medium, and size of the advertisement, or its duration. Generally, the media slots listed here could be used to focus upon the target commuter and shopper switcher groups for potential public transit patronage.

Ideas for copy and format arise mainly from the determinant attributes and image gaps noted above. However, these may be augmented by noting the life-style correlates of persons who are exposed to media such as classical music, university newspapers, progressive-rock and "oldies" music, and the like. The target commuters are particularly well described in these media terms; the target shoppers are perhaps more heterogeneous, but tend also towards liberalism and cosmopolitanism.

Financing Public Transportation

The relative acceptability of financing alternatives for public transit were determined, as well as the comparisons in financing attitudes between the general public and the "leaders" samples (Table 11).[4] The rank orders correspond fairly closely, although it may be interesting to note that the leaders were more sensitive to property tax subsidies of mass transit (more strongly opposed then the general public) versus a sales tax subsidy (leaders somewhat favorable, general sample somewhat opposed). The significance of the data on financing attitudes is that most "solutions" are opposed by both groups, except for a relative lack of hostility (but not strong support) to tapping the "highways trust fund" for public transportation. It is perhaps fortunate, therefore, that current federal programs are moving to supplement local transit programs (although this amounts to a personal income tax subsidy, already tolerated in a number of other program areas).

The considerable body of literature showing greater sensitivity of ridership to service than price is supported by these findings as well. Tables 1 and 6 show that both groups of switchers value economy, and they see buses as relatively economical. Other data in the study indicates they are more apt to complain about long waits for buses, inconvenient routes, lack of information about the system, and risk of being stranded, than about bus fares (Table 12). For commuter trips, prices should not be cut, and some increase may be profitable if balanced by service improvements. Some price increases might also be used to support service improvements in the shopping/personal business segment, although this should be tempered by the lower target group income (Table 7) and greater excess capacity here. Political considerations may modify price increases in either trip sector, as they affect those who have less discretion concerning public transit: the poor and aged. Bus discount coupons for these groups might be used, with others paying the increased fares for increased service.

TABLE 11

RELATIVE ACCEPTABILITY OF FINANCING METHODS
FOR PUBLIC TRANSPORTATION IMPROVEMENTS

	General Sample		Leaders Sample	
	Mean Attitude	Rank	Mean Attitude	Rank
Would you pay 1 or 2 cents tax/gal. of gasoline with that money going to mass transit?	2.70	1	3.08	3
Riders should pay full costs of service	2.84	2	2.34	1
Riders pay most costs; with balance from gasoline tax revenue	2.92	3	3.20	4
Would you be in favor of a 1/2% increase in the current sales tax with the money collected earmarked for mass transit improvement?	3.22	4	2.88	2
Would you . . . favor paying higher vehicle license plate fees on your personal vehicle with the money . . . for mass transit	3.26	5	3.45	5
"No fare" for riders; mass transit financed by gasoline tax . . .	3.35	6	4.41	7
Riders pay most costs, with balance from tax added to property taxes	3.95	7	4.54	9
Riders pay most costs, with balance from tax on electric bills	4.04	8	3.95	6
"No fare" for riders; mass transit financed by tax added to property taxes	4.12	9	4.80	10
"No fare" for riders; mass transit financed by tax added to electric bills	4.27	10	4.41	8

[1] 1=Definitely Yes, 2=Yes, 3=Neutral, 4=No, 5=Definitely no

TABLE 12

PROBLEMS WITH BUSES, ACCORDING TO POTENTIAL SWITCHERS

Rank	Problem	Percent Listing as "Three Worst"
1 (tie)	Long waits for buses	50.0
1 (tie)	Routes don't go where wanted	50.0
3 (tie)	Lack of information about system	30.0
3 (tie)	Risk of being stranded, especially at night	30.0
5	Loss of personal freedom	26.3
6	Slower than car	21.1
7 (tie)	No bus service available	18.4
7 (tie)	Cost of fare	18.4
9	Long walks to bus stop	15.8
10 (tie)	No bus shelters	13.1
10 (tie)	Inconvenient with packages	13.1
12 (tie)	Rude bus drivers	7.9
12 (tie)	Not good when you have children with you	7.9
12 (tie)	Too many bus riders are dangerous or undesirable people	7.9
15 (tie)	Dirty buses	2.6
15 (tie)	Old buses	2.6

CONCLUSIONS

This report has demonstrated how information and attitudes relevant to improving a public transportation system, and its support from potential switchers and tax-payers, may be gathered and analyzed to aid in decision-making. Caution should be used prior to applying specific strategy suggestions to other communities and time periods, although the basic approach and methodology may be generally useful. The number of problems remaining for public (and private) transportation will not be solved by research alone. In addition, technical cost-benefit studies of alternative transportation modes and systems must supplement these attitude studies. However, by employing methods to determine the attributes sought by potential users of public transportation, as well as by travelers in general, it may be possible to improve high-density transportation sufficiently to enable freer choices for those who may wish to (or be forced to) travel by public transportation in coming years.

NOTES

[1]An upward bias would result from extrapolating this intention-question to the city-universe, due to a combination of respondents' being more favorable towards mass transit than non-respondents, and an inability to satisfy what the entire target market defines as an improved transit system.

[2]This is not a strict statistical test, since the true universe mean and sigma are unknown, but it provides a reasonable cut-off for "how high is high."

[3]Roughly 40,000 of Austin's 300,000 population are students, a large proportion of which are served by a university shuttle bus system. Prior to the UT shuttle inception, students were the principal riders of the city bus system, and their patronage loss precipitated chaos for the city system. In communities less dependent on student ridership patronage, or where an integrated bus system exists, it may be desirable to meet student patron needs, even where they differ from non-student riders and potential riders. Where a city bus system needs to achieve patronage not sensitive to student flunctuations, it may be comforting to find out that (as in Austin) student and non-student potential switchers seek the same features and have compatible values and backgrounds.

[4]Only the data concerning attitudes of the "leaders" sample toward financing public transportation have been discussed in the body of this report, since this group provides little source of switchers to public transportation for their own trips. However, their responses to the entire survey are summarized in Appendix A2 and may be useful for comparison with the general adult community, from which they are shown to differ greatly in perspective and characteristics.

APPENDIX 1

SURVEY INSTRUMENT

APPENDIX 1
SURVEY INSTRUMENT
(Adapted to Fit This Report)

TRANSPORTATION SURVEY

PART 1

1. In a typical week, about how many trips do you take from home to work or school? None _____ 1 to 4 _____ 5 or more _____ (If none, go to Part 2).
2. For these trips to work or school, how do you usually get there? (Please check one only).

   As car driver _____ Car pool _____ City bus _____ UT shuttle bus _____ Walking _____ Bicycle _____ Motorcycle _____ Other _____
3. Do you usually travel alone? Yes _____ No _____
4. In general, are you satisfied with the transportation you use for getting to work or school?

   Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

IMPORTANCE RATING FORM
Transportation to Work, (or School, if you are a Student)

The following is a list of attributes or features that might affect a decision of what transportation mode you might choose for getting to work (or your school). Assume you are to choose a mode of transportation from among several alternative types (private car, bus, car-pool, taxi, etc.). After each attribute, please place a check in the appropriate column, to indicate how important each of these features is in your own choice of a transportation mode for getting to work (or your school). Please check only one column for each attribute.

	No Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
5. Economy					
6. Convenience					
7. Brief Travel Time (door to door)					
8. Smooth Ride					
9. Freedom from Weather (door to door)					
10. Opportunity to Socialize					
11. Avoid Traffic Congestion					
12. Socially Accepted Transportation Mode					
13. No Parking Problems					
14. Flexibility					
15. Uncrowded					
16. Freedom from Accidents					
17. Fun to Drive					
18. Freedom from Repairs					
19. Safe from Dangerous People					
20. Low Pollution per Passenger					
21. Relaxing					
22. Ease of Travel with Packages					
23. Ability to Look at Scenery					

DIFFERENCE RATING FORM
Transportation to Work (or School, if you are a Student)

From your knowledge of various transportation modes, how much difference do you feel there is among modes for getting to work, or your school (private car, bus, car-pool, taxi, etc.), in each of these attributes? Please place a check in the column (one check only) which best indicates your opinion of the extent to which these differences are present.

	No Differences	Slight Differences	Moderate Differences	Large Differences	Extreme Differences
32. Economy					
33. Convenience					
34. Brief Travel Time (door to door)					
35. Smooth Ride					
36. Freedom from Weather (door to door)					
37. Opportunity to Socialize					
38. Avoid Traffic Congestion					
39. Socially Accepted Transportation Mode					
40. Parking Problems					
41. Flexibility					
42. Uncrowded					
43. Freedom from Accidents					
44. Fun to Drive					
45. Freedom from Repairs					
46. Safe from Dangerous People					
47. Low Pollution per Passenger					
48. Relaxing					
49. Ease of Travel with Packages					
50. Ability to Look at Scenery					

24. Ability to Read					
25. Low Energy Use per Passenger					
26. Can Listen to Radio or Tape					
27. Dependability					
28. Pleasant Riding Surroundings					
29. Privacy					
30. Ease of Traveling with Children					
31. Quiet Ride					

CONTINUE ON OPPOSITE SIDE WITH QUESTION 32

51. Ability to Read					
52. Low Energy Use per Passenger					
53. Can Listen to Radio or Tape					
54. Dependability					
55. Pleasant Riding Surroundings					
56. Privacy					
57. Ease of Traveling with Children					
58. Quiet Ride					

CONTINUE WITH QUESTION 59

Now, please use the scales on this page to indicate your feelings about the degree to which owning your car would be suitable for trips made to work (or your school). Place a check on the position between each pair of terms that best describes your feelings about the suitability of your own car (whether or not you own one) for trips made to work or school. For example, if you feel that your car would be likely to be moderately interesting as a transportation mode for getting to work or school, you would place a check on the "Interesting-Boring" scale as shown below. Please do this for EACH pair of items, without skipping any.

Now, please use these scales to indicate your feelings about the degree to which a bus would be suitable for trips made to work or school. Please do as you did before, without skipping any of the scales.

EXAMPLE: Extremely Moderately Neutral Moderately Extremely

Interesting _____ : ___X___ : _____ : _____ : _____ Boring

YOUR OWN CAR FOR TRIPS TO WORK OR SCHOOL

59.	Economical	: : : :	Expensive
60.	Convenient	: : : :	Inconvenient
61.	Brief Travel Time	: : : :	Long Travel Time
62.	Smooth Ride	: : : :	Rough Ride
63.	Free from Weather (door-to-door)	: : : :	Exposed to Weather (door-to-door)
64.	Easy to Socialize	: : : :	Hard to Socialize
65.	Avoids Traffic Congestion	: : : :	Gets into Traffic Congestion
66.	High Status	: : : :	Low Status
67.	Few Parking Problems	: : : :	Many Parking Problems
68.	Flexible	: : : :	Inflexible
69.	Uncrowded	: : : :	Crowded
70.	Safe from Accidents	: : : :	Likely to have Accidents
71.	Fun to Drive	: : : :	Not Fun to Drive
72.	Free from Repairs	: : : :	Not Free from Repairs
73.	Safe from Dangerous People	: : : :	Not Safe from Dangerous People
74.	High Pollution per Rider	: : : :	Low Pollution per Rider
75.	Relaxing	: : : :	Full of Tension
76.	Easy with Packages	: : : :	Difficult with Packages
77.	Can Look at Scenery	: : : :	Can't Look at Scenery
78.	Easy to Read	: : : :	Hard to Read
79.	Low Energy Use per Passenger	: : : :	High Energy Use per Passenger
80.	Radio or Tape Deck Available	: : : :	No Radio or Tape Deck Available
81.	Dependable	: : : :	Undependable
82.	Pleasant Riding Surroundings	: : : :	Unpleasant Riding Surroundings
83.	High Privacy	: : : :	Low Privacy
84.	Difficult with Children	: : : :	Easy with Children
85.	Quiet Ride	: : : :	Noisy Ride

86. In a typical week, about how many trips do you take from home to work or school, driving your car? None____ 1 to 4 ____ 5 or more _____

CONTINUE ON OPPOSITE SIDE WITH QUESTION 87

BUS FOR TRIPS TO WORK OR YOUR SCHOOL

87.	Economical	: : : :	Expensive
88.	Convenient	: : : :	Inconvenient
89.	Brief Travel Time	: : : :	Long Travel Time
90.	Smooth Ride	: : : :	Rough Ride
91.	Free from Weather (door-to-door)	: : : :	Exposed to Weather (door-to-door)
92.	Easy to Socialize	: : : :	Hard to Socialize
93.	Avoids Traffic Congestion	: : : :	Gets into Traffic Congestion
94.	High Status	: : : :	Low Status
95.	Few Parking Problems	: : : :	Many Parking Problems
96.	Flexible	: : : :	Inflexible
97.	Uncrowded	: : : :	Crowded
98.	Safe from Accidents	: : : :	Likely to have Accidents
99.	Fun to Drive	: : : :	Not Fun to Drive
100.	Free from Repairs	: : : :	Not Free from Repairs
101.	Safe from Dangerous People	: : : :	Not Safe from Dangerous People
102.	High Pollution per Rider	: : : :	Low Pollution per Rider
103.	Relaxing	: : : :	Full of Tension
104.	Easy with Packages	: : : :	Difficult with Packages
105.	Can Look at Scenery	: : : :	Can't Look at Scenery
106.	Easy to Read	: : : :	Hard to Read
107.	Low Energy Use per Passenger	: : : :	High Energy Use per Passenger
108.	Radio or Tape Deck Available	: : : :	No Radio or Tape Deck Available
109.	Dependable	: : : :	Undependable
110.	Pleasant Riding Surroundings	: : : :	Unpleasant Riding Surroundings
111.	High Privacy	: : : :	Low Privacy
112.	Difficult with Children	: : : :	Easy with Children
113.	Quiet Ride	: : : :	Noisy Ride

114. In a typical week, about how many trips do you take from home to work or school, using a bus? None _____ 1 to 4 _____ 5 or more _____

TURN PAGE OVER AND CONTINUE WITH QUESTION 115

PART 2

115. Now we would like to know something about the transportation you use for trips for shopping or personal business. In a typical week, how many trips do you take to some place to shop or do personal business? None _____ 1 to 4 _____ 5 or more _____ (if none, go on to Part 3, next page).

116. For these trips for shopping or personal business, how do you usually get there? (Please check one only).

As car driver _____ Car pool _____ City bus _____ UT shuttle bus _____ Walking _____ Bicycle _____ Motorcycle _____ Other _____

117. Do you usually travel alone? Yes _____ No _____

118. In general, are you satisfied with the transportation you use for shopping or personal business?

Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

IMPORTANCE RATING FORM
Transportation for Shopping or Personal Business

Please place a check in the appropriate column, to indicate how desirable you feel each of these traits would be in choosing a transportation mode for shopping trips or personal business (medicine, groceries, clubs, etc.)

		No Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
119.	Economy					
120.	Convenience					
121.	Brief Travel Time (door-to door)					
122.	Smooth Ride					
123.	Freedom from Weather (door to door)					
124.	Opportunity to Socialize					
125.	Avoid Traffic Congestion					
126.	Socially Accepted Transportation Mode					
127.	No Parking Problems					
128.	Flexibility					
129.	Uncrowded					
130.	Freedom from Accidents					
131.	Fun to Drive					
132.	Freedom from Repairs					
133.	Safe from Dangerous People					
134.	Low Pollution Per Passenger					
135.	Relaxing					
136.	Ease of Travel with Packages					

DIFFERENCE RATING FORM
Transportation for Shopping or Personal Business

Now, please place a check in the appropriate column for each attribute, indicating how much you feel various possible transportation modes (private car, bus, car-pool, taxi, etc.) might differ in their suitability for transportation for shopping or personal business.

		No Differences	Slight Differences	Moderate Differences	Large Differences	Extreme Differences
146.	Economy					
147.	Convenience					
148.	Brief Travel Time (door-to door)					
149.	Smooth Ride					
150.	Freedom from Weather (door to door)					
151.	Opportunity to Socialize					
152.	Avoid Traffic Congestion					
153.	Socially Accepted Transportation Mode					
154.	Parking Problems					
155.	Flexibility					
156.	Uncrowded					
157.	Freedom from Accidents					
158.	Fun to Drive					
159.	Freedom from Repairs					
160.	Safe from Dangerous People					
161.	Low Pollution per Passenger					
162.	Relaxing					
163.	Ease of Travel with Packages					

137.	Ability to Look at Scenery					
138.	Ability to Read					
139.	Low Energy Use per Passenger					
140.	Can Listen to Radio or Tape					
141.	Dependability					
142.	Pleasant Riding Surroundings					
143.	Privacy					
144.	Ease of Traveling with Children					
145.	Quiet Ride					

CONTINUE ON OPPOSITE SIDE WITH QUESTION 146

164.	Ability to Look at Scenery					
165.	Ability to Read					
166.	Low Energy Use per Passenger					
167.	Can Listen to Radio or Tape					
168.	Dependability					
169.	Pleasant Riding Surroundings					
170.	Privacy					
171.	Ease of Traveling with Children					
172.	Quiet Ride					

CONTINUE WITH QUESTION 173

Now, please use these scales to indicate your feelings about the degree to which a car driven by you would be suitable for trips made for shopping or personal business.

PRIVATE CAR FOR SHOPPING OR PERSONAL BUSINESS

173.	Economical ___:___:___:___:___		Expensive
174.	Convenient ___:___:___:___:___		Inconvenient
175.	Brief Travel Time ___:___:___:___:___		Long Travel Time
176.	Smooth Ride ___:___:___:___:___		Rough Ride
177.	Free from Weather (door to door) ___:___:___:___:___		Exposed to Weather (door to door)
178.	Easy to Socialize ___:___:___:___:___		Hard to Socialize
179.	Avoids Traffic Congestion ___:___:___:___:___		Gets into Traffic Congestion
180.	High Status ___:___:___:___:___		Low Status
181.	Few Parking Problems ___:___:___:___:___		Many Parking Problems
182.	Flexible ___:___:___:___:___		Inflexible
183.	Uncrowded ___:___:___:___:___		Crowded
184.	Safe from Accidents ___:___:___:___:___		Likely to have Accidents
185.	Fun to Drive ___:___:___:___:___		Not Fun to Drive
186.	Free from Repairs ___:___:___:___:___		Not Free from Repairs
187.	Safe from Dangerous People ___:___:___:___:___		Not Safe from Dangerous People
188.	High Pollution per Rider ___:___:___:___:___		Low Pollution per Rider
189.	Relaxing ___:___:___:___:___		Full of Tension
190.	Easy with Packages ___:___:___:___:___		Difficult with Packages
191.	Can Look at Scenery ___:___:___:___:___		Can't Look at Scenery
192.	Easy to Read ___:___:___:___:___		Hard to Read
193.	Low Energy Use per Passenger ___:___:___:___:___		High Energy Use per Passenger
194.	Radio or Tape Deck Available ___:___:___:___:___		No Radio or Tape Deck Available
195.	Dependable ___:___:___:___:___		Undependable
196.	Pleasant Riding Surroundings ___:___:___:___:___		Unpleasant Riding Surroundings
197.	High Privacy ___:___:___:___:___		Low Privacy
198.	Difficult with Children ___:___:___:___:___		Easy with Children
199.	Quiet Ride ___:___:___:___:___		Noisy Ride

200. In a typical week, about how many trips do you make for shopping or personal business, driving your car?
None _____ 1 to 4 _____ 5 or more _____

CONTINUE ON OPPOSITE SIDE WITH QUESTION 201

Now, please use these scales to indicate your feelings about the degree to which a bus would be suitable for trips made for shopping or personal

BUS FOR SHOPPING OR PERSONAL BUSINESS

201.	Economical ___:___:___:___:___		Expensive
202.	Convenient ___:___:___:___:___		Inconvenient
203.	Brief Travel Time ___:___:___:___:___		Long Travel Time
204.	Smooth Ride ___:___:___:___:___		Rough Ride
205.	Free from Weather (door to door) ___:___:___:___:___		Exposed to Weather (door to door)
206.	Easy to Socialize ___:___:___:___:___		Hard to Socialize
207.	Avoids Traffic Congestion ___:___:___:___:___		Gets into Traffic Congestion
208.	High Status ___:___:___:___:___		Low Status
209.	Few Parking Problems ___:___:___:___:___		Many Parking Problems
210.	Flexible ___:___:___:___:___		Inflexible
211.	Uncrowded ___:___:___:___:___		Crowded
212.	Safe from Accidents ___:___:___:___:___		Likely to have Accident
213.	Fun to Drive ___:___:___:___:___		Not Fun to Drive
214.	Free from Repairs ___:___:___:___:___		Not Free from Repairs
215.	Safe from Dangerous People ___:___:___:___:___		Not Safe from Dangerous People
216.	High Pollution per Rider ___:___:___:___:___		Low Pollution per Rider
217.	Relaxing ___:___:___:___:___		Full of Tension
218.	Easy with Packages ___:___:___:___:___		Difficult with Packages
219.	Can Look at Scenery ___:___:___:___:___		Can't Look at Scenery
220.	Easy to Read ___:___:___:___:___		Hard to Read
221.	Low Energy Use per Passenger ___:___:___:___:___		High Energy Use per Passenger
222.	Radio or Tape Deck Available ___:___:___:___:___		No Radio or Tape Deck Available
223.	Dependable ___:___:___:___:___		Undependable
224.	Pleasant Riding Surroundings ___:___:___:___:___		Unpleasant Riding Surroundings
225.	High Privacy ___:___:___:___:___		Low Privacy
226.	Difficult with Children ___:___:___:___:___		Easy with Children
227.	Quiet Ride ___:___:___:___:___		Noisy Ride

228. In a typical week, about how many trips do you make for shopping or personal business using the bus?
None _____ 1 to 4 _____ 5 or more _____

CONTINUE WITH QUESTION 229 ON NEXT PAGE

PART 3 TRANSIT ATTITUDES

229. A public mass transit system could be financed in a number of ways. Please rate the following in terms of your preference for financing a public mass transit system.

(a) Riders should pay the full cost of service.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no

(b) "No fare" for riders; mass transit financed by gasoline tax revenues.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

(c) "No fare" for riders; mass transit financed by tax added to electric bills.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

(d) "No fare" for riders; mass transit financed by tax added to property taxes.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

(e) Riders pay most costs, with balance from gasoline tax revenues.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

(f) Riders pay most costs, with balance from tax on electric bills.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

(g) Riders pay most costs, with balance from tax added to property taxes.
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

236. Indicate which four of the following areas should receive high importance for city tax dollar priorities. (Please check the four most important).

_____ a) local street paving
_____ b) street crossing safety
_____ c) traffic safety
_____ d) automobile noise control
_____ e) automobile pollution control
_____ f) rail mass transit
_____ g) bus mass transit
_____ h) exclusive bus lanes
_____ i) residential sidewalks
_____ j) hike and bike trails

237. How much is the fare for a typical (about 5 mile) city bus trip in Austin? (If you don't know, leave blank).

a) 20¢ _____ b) 25¢ _____ c) 30¢ _____ d) 35¢ _____ e) 40¢ _____

238. If you were to change residence would you consider the distance of the new residence from your place of employment as a major selection criteria?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

239. If express services were provided at the auditorium or other locations outside the downtown area, would you be willing to park there and take the express to the downtown area?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

240. Which form of mass transit would you prefer?

a) buses as now _____ b) buses with special bus lanes _____ c) rail mass transit _____ d) other _____

241. Should government encourage the use of non-auto transportation as a solution to traffic congestion and air pollution?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

242. Do you believe that Austin will soon have a severe air pollution problem because of excessive automobile traffic?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

243. Does the lack of sidewalks deter you from walking short distances in your neighborhood?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

244. Are the streets in your neighborhood well maintained?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

245. Should employers be responsible for supplying parking for their employees to reduce on-street parking?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

246. Do you often use streets that have bicycle lanes? Yes _____ No _____ If so, do these lanes interfere with traffic?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

247. Would you be in favor of bus passes as a fringe benefit of your employment?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

248. Would a bus pass as a fringe benefit cause you to ride the buses more frequently, especially to and from work?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

249. Would you be in favor of car pools to travel to and from work if your car were in the pool?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

250. If vehicles (cars, vans, trucks, etc.) were supplied by employers, would you favor car pools?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

251. Would you pay 1 or 2 cents tax per gallon of gasoline with that money being used to help pay for a mass transit system?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

252. Would you be in favor of a 1/2% increase in the current sales tax with the money collected earmarked for mass transit improvement?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

253. Would you be in favor of paying higher annual vehicle license plate fees on your personal vehicles with the money collected earmarked for mass transit improvement?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

254. Do you think that it is less expensive to ride the city bus to and from work (assuming 60¢ per round trip) than it is to drive your own car (taking into account gas, oil, parking, depreciation, insurance, etc.)?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

255. Do you need your car for business trips during the day?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

256. Are the city bus schedules and maps easy for you to understand? (If you have not seen any, leave the question blank).
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

257. If you had to pay to park your car, what price for parking your vehicle each day would cause you to switch to using transit?

_____ 50¢ _____ $1 _____ $1.51 to $2.00
_____ 51¢ to 99¢ _____ $1.01 to $1.50 _____ More than $2.00

258. If you do not ride the bus, why not? Or if you ride the bus, which of the following items bother you? (Rank the worst three with No. 1 being the worst.)

_____ Long walks to bus stop (How far is too long--on level ground _____ blocks; uphill? _____ blocks?
_____ Risk of being stranded, especially at night
_____ Long waits for buses
_____ Cost of fare
_____ Dirty buses
_____ Old buses
_____ Rude bus drivers
_____ Lack of information about system
_____ No bus shelters
_____ Not good when you have children with you
_____ Slower than car
_____ Routes do not go where you want to go
_____ Too many bus riders are dangerous or undesirable people
_____ Inconvenient when you have packages
_____ Loss of personal freedom
_____ No bus service available
_____ Other _____

259. If city mass transit were improved, low-cost and provided convenient service, would you use it for trips to work or school?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

260. If city mass transit were improved, low-cost and provided convenient service, would you use it for shopping or personal business?
Definitely yes _____ Moderately yes _____ Neutral _____ Moderately no _____ Definitely no _____

261. How long does it take you to get to work (or your school, if student) usually?

_____ 0 to 5 minutes _____ 6 to 15 minutes _____ 16 to 30 minutes _____ More than 30 minutes

262. If you drive to work, where do you usually park?

Parking garage _____ Street without meter _____
Parking lot _____ Street with parking meter _____ Other _____

263. How far from your work place do you usually park: _____ blocks

PLEASE TURN PAGE AND CONTINUE WITH PART 4

PART 4

We would like to find out some good ways of informing people about changes and improvements in the transportation system for roads, safety, buses, etc. Please answer the following questions concerning your preferences in radio, t.v., newspapers, and the like.

264. How much time on the average, do you spend each day using a newspaper, the radio, etc?

Reading the Newspaper	Reading Magazines	Listening to the Radio	Watching Television
_____Don't read the newspaper	_____Don't read magazines	_____Don't listen at all	_____Don't watch at all
_____1-30 minutes	_____1-30 minutes	_____1-60 minutes	_____1-60 minutes
_____31-60 minutes	_____31-60 minutes	_____1-3 hours	_____1-3 hours
_____Over 1 hour	_____Over 1 hour	_____Over 3 hours	_____Over 3 hours

265. Which newspaper(s) do you normally read at least 3 times per week?

_____None
_____AUSTIN AMERICAN STATESMAN
_____Spanish Language Newspaper
_____THE DAILY TEXAN
_____Other (Which one?_____)

266. What sections of the newspaper do you usually read (Please check your 4 favorites)?

_____General news (first section)
_____Comics
_____Sports
_____Woman's Section
_____Business Section
_____Want Ads
_____Ann Landers or Dear Abby
_____Entertainment
_____Advertisements
_____Other (which?_____)

267. What radio stations do you usually listen to? Please check the one(s) you listen to at least 3 times per week, and ALSO check the time(s) you normally listen to each.

	Station		Times					
	None	AM	7-9 a.m.	9a.m.-Noon	Noon-4p.m.	4-6p.m.	6-10p.m.	10p.m. on
_____	KLBJ	590	_____	_____	_____	_____	_____	_____
_____	KTAP	970	_____	_____	_____	_____	_____	_____
_____	KVET	1300	_____	_____	_____	_____	_____	_____
_____	KOKE	1370	_____	_____	_____	_____	_____	_____
_____	KNOW	1490	_____	_____	_____	_____	_____	_____
		FM						
_____	KMFA	89.5	_____	_____	_____	_____	_____	_____
_____	KUT	90.7	_____	_____	_____	_____	_____	_____
_____	KLBJ	93.7	_____	_____	_____	_____	_____	_____
_____	KOKE	95.5	_____	_____	_____	_____	_____	_____
_____	KHFI	98.3	_____	_____	_____	_____	_____	_____
_____	KASE	101	_____	_____	_____	_____	_____	_____
_____	KRMH	103.7	_____	_____	_____	_____	_____	_____

280. What programs do you usually listen to (please rank your first 4 choices)?

_____None
_____News
_____Variety
_____Sports
_____Talk-shows
_____"Top-40" Music
_____Country-Western Music
_____Classical Music
_____"Easy-Listening"
_____Other Programs

281. What T.V. stations do you usually watch? Please check the one(s) you watch at least 3 times per week, and ALSO check the time(s) you normally watch each.

Channel	Station	Cable	Times					
			7-9 a.m.	9a.m.-Noon	Noon-4p.m.	4-6p.m.	6-10p.m.	10p.m. on
_____	24 KVUE	Cable 3 (Austin)	_____	_____	_____	_____	_____	_____
_____	36 KTVV	Cable 4 (Austin)	_____	_____	_____	_____	_____	_____
_____	7 KTBC	Cable 5 (Austin)	_____	_____	_____	_____	_____	_____
_____	9 KLRN	Cable 8 (San Antonio and Austin)	_____	_____	_____	_____	_____	_____
_____	11 KTVT	Cable 9 (Ft. Worth)	_____	_____	_____	_____	_____	_____
_____	41 KWEX	Cable 13 (San Antonio)	_____	_____	_____	_____	_____	_____
_____	Other		_____	_____	_____	_____	_____	_____

288. What programs do you usually watch (please rank your first 4 choices)?

_____None	_____News	_____Game Shows	_____Plays
_____Variety	_____Talk Shows	_____Westerns	_____Other (which?
_____Sports	_____Movies	_____Comedies	_____)
_____Children's	_____Soap Operas	_____Police/Detective	

289. What clubs or organizations do you belong to and attend about once per month or more?

_____None	_____Political Groups	_____Athletic Team	_____Neighborhood Organizations
_____Church Organizations	_____PTA	_____Card Group	
_____Other(s) (which?_____)			

PLEASE CONTINUE WITH PART 5 BELOW

PART 5

Finally, we would like to have some information about you, for analysis and tabulation purposes. Please answer the following CONFIDENTIAL questions.

290. Sex: ____Male ____Female
291. Marital Status: ____Single ____Married ____Other
292. Are you a student? ____Full time student ____Part time student ____Not a student
293. What is the approximate address of your place of employment? (If not employed, leave blank) Address or nearest intersection _____
294. Your Age: ____Less than 21 years ____21-29 years ____30-44 years ____45-59 years ____60 years or older
295. How many people are in your household? ____One ____Two ____Three ____Four ____Five or more
296. Please indicate the age of your oldest child living at home. If you have no children living at home, leave question blank.
____3 years or younger ____4-5 years ____6-12 years ____13-19 years ____20 years or older
297. What is the highest level of education attained by you?
____Junior High or less ____Some High School ____High School Graduate ____Some College/Professional Training ____College Grad or Higher
298. Which category best describes your total family income for 1972? If you are a student, indicate only the combined total of your and your spouse's incomes. Your answer to this question and ALL other questions, is COMPLETELY CONFIDENTIAL.
____Less than $5,000 ____$5,000-$9,999 ____$10,000-$14,999 ____$15,000-$19,999 ____$20,000 or more
299. What is your ethnic background? ____Mexican-American ____Black ____White ____Other
300. Do you ? ____Own home ____Live in Mobile Home ____Rent home ____Rent Apartment ____Other
301. How many automobiles are in your household? ____None ____One ____Two ____Three or More
302. How long have you lived in Austin? ____Less than 6 months ____6 months to 1 year ____1 to 3 years ____3 to 5 years ____5 years or more
303. Do you work in the downtown area of Austin? (U.T., Capitol Area, Central Business District) Yes _____ No _____
304. Approximately how often do you shop in stores in the downtown area of Austin?
____Twice a week or more often ____2 or 3 times a month ____Once a month ____Every 2 or 3 months ____Almost never
305. Approximately how often do you shop in stores in Highland Mall?
____Twice a week or more often ____2 or 3 times a month ____Once a month ____Every 2 or 3 months ____Almost never
306. Approximately how often do you shop in stores in Hancock Center?
____Twice a week or more often ____2 or 3 times a month ____Once a month ____Every 2 or 3 months ____Almost never
307. Approximately how often do you shop in stores in Southwood Center?
____Twice a week or more often ____2 or 3 times a month ____Once a month ____Every 2 or 3 months ____Almost never

Comments: _____

_____

_____

Your help and cooperation are greatly appreciated. If you would like a summary of the results of this study, please indicate it and fill in your name and address. Yes_____ No _____

NAME AND ADDRESS (if results desired) _____

_____

_____

APPENDIX 2

The Austin Leaders Sample

As noted in the body of the report, in addition to the random sample of general adults in the Austin area, interviews were also held with a random sample of persons who had been identified by the Austin City Planning Department as community leaders. The list provided by the department contained financial people, real estate builders, chamber of commerce members, and other influential people. Persons on this list were contacted by telephone to introduce the survey and establish an interview time. The cover explanation about surveying attitudes on transportation and community desires was the same as that in the general sample. Cooperation from this group was at a higher participation level than for the general adult community, possibly aided by the telephone initial contact (versus having an interviewer initiate contact at the door).

The major purpose in conducting this special sample was to insure obtaining enough "influential" persons to represent their views, particularly on transportation financing, to city planners and the city council. While some leaders were no doubt randomly contacted as part of the general adult sample, it was felt that for comparison purposes, an enriched list should be used to guarantee a representative sample of community leaders. The leaders' financial alternative attitudes towards public transportation have been projected in the main report. This appendix highlights their responses to the modal choice, determinant attributes and mode comparisons, demographics, and media, by comparing their responses to those given by the general adults contacted in the main survey. While it is not intended that a transportation system should be designed specifically for the leadership group, their views on transportation benefits desired are helpful in understanding their political behavior and in attempting to influence their support for public transportation programs, even if they would not normally expect to use the supported facilities.

Work/School Trips

All of the forty-one usable respondents from the leaders sample answered the question concerning the mode usually selected for trips to work or school. Ninety percent normally travel in cars, and none usually use a bus for commuting. Two persons indicated they would definitely use the city mass transit system if it were improved. Although the leaders' sample is smaller than the general adult, this 5 percent "switchers" versus about 15 percent in the general sample may support the intuitive notion that the city leaders are relatively less likely to use public transit than the average citizen. Data on their determinants of modal choice provide some understanding of this tendancy, particularly in comparison to the determinants of the general respondents, and of the general switcher-group. (Demographic comparisons provide additional explanation, and these will be discussed later.)

Table A1 presents a descending ranking of the determinance of the 27 characteristics of modes used for transportation to work or school, as rated by the sample of community leaders. The methodology for calculating "significantly determinant" features is that explained previously, in the body of the report.

Five attributes were found to be the major determinants of transportation modes selected by leaders for their work/school trips (actually, work trips, since none were students). These five were also determinant attributes for the target switcher group in the general sample and included convenience, flexibility, dependability, brief travel time, and avoiding parking problems. However, six attributes viewed as determinant by the potential switchers to public transportation were not nearly as important for the leaders (who were less likely to switch). These included: freedom from repairs, freedom from accidents, safety from dangerous people, low energy use per passenger, low pollution per passenger, and economy. Since all but one of these were earlier shown as perceived advantages of public transportation, it is reasonable to assume that the leaders' reluctance to switch from private transportation is supported by their lower need for the transportation features that are preferred by those who would switch. Further, there exists potential conflict between the leaders' view of a desirable transportation system and that which might be needed to attract

TABLE A1

LEADERS, DETERMINANCE SCORES AND MODAL COMPARISONS, WORK/SCHOOL

RANK	ATTRIBUTE	Z VALUE
1	Convenience	7.597[1]
2	Flexibility	5.789[1]
3	Dependability	5.531[1]
4	Brief travel time	3.723[1]
5	No parking problems	1.727[2]
6	Freedom from repairs	1.234
7	Freedom from accidents	.976
8	Privacy	.905
9	Freedom from weather	.694
10	Safe from dangerous people	.671
11	Low energy use per passenger	.671
12	Ease of travel with packages	.483
13	Pleasant riding surroundings	- .198
14	Low pollution per passenger	- .175
15	Uncrowded	- .292
16	Relaxing	- .527
17	Avoids traffic congestion	- .715
18	Can listen to radio or tape	- .785
19	Fun to drive	-1.231
20	Economy	-1.325
21	Quiet ride	-1.725
22	Smooth ride	-2.523
23	Ease of traveling with children	-2.734
24	Ability to look at scenery	-3.486
25	Ability to read	-4.542
26	Socially accepted transportation mode	-4.777
27	Opportunity to socialize	-4.965

[1] $p < .05$

[2] $p < .10$

greater ridership. The leaders' naturally lowered sensitivity to economy, and their lower stress on pollution/energy characteristics of modal choice suggest that care be taken by planners to communicate to them the relevance of these criteria to potential riders.

Of course, the community leadership would be expected to have different modal choice criteria than would potential switchers to public transportation, and the differences are in general what one would intuitively expect. Table A2 presents additional comparative data, this time between the determinance scores for the leaders sample versus those for the entire general adult sample (of which the switchers may be taken as a more "liberal" subset). For the work/school trip segment, it is definitely possible to discriminate leaders from the general adult public, in terms of their profile of determinance scores for modal choice criteria. The Wilks' Lambda measure of dissimilarity between these two groups' determinance scores is significant at a level of $\alpha = .0002$, with most of the difference being due to the attributes listed in the top of Table A2. Compared to the general adult respondents, the leaders appeared significantly less concerned with economy, opportunity to socialize, and pollution per passenger, but relatively more concerned with convenience, flexibility, fun of driving, and the ability to listen to radio or tape while traveling. It should be noted that attributes with low mean determinance scores (below 13, for example) are probably not determinant to either group. Thus one could not conclude that the leaders base their modal choice decisions on criteria, such as fun-to-drive, that are irrelevant to the majority of both groups. However, the relative importance of both determining and non-determining modal criteria may influence one's (or a leader's) perceptions of what might constitute an improvement in the transportation system. To this end, it may be wise to view the general public's needs as somewhere between the two means reported in this table, since it is expected that among the general adults, respondents were more favorably disposed to public transportation (and its attributes) than were non-respondents. It is likely, however, that the substance of the comparative profile differences is appropriate to distinguish leaders' needs from the general adults, particularly where the gaps are greatest, even though the differences may not be as large as those indicated in this table.

TABLE A2
LEADERS DISCRIMINATED FROM GENERAL ADULT:
PROFILE OF DETERMINANCE SCORES FOR MODAL CHOICE CRITERIA

WORK/SCHOOL

Variable	Leaders Mean	General Adult Mean	F-ratio
Economy	8.6053	13.4931	17.7038[2]
Convenience	18.6053	15.6042	6.1609[1]
Opportunity to socialize	4.5263	6.8333	5.4558[1]
Flexibility	16.5789	13.4792	5.8198[1]
Fun to drive	9.0263	6.9236	3.8724[1]
Low pollution per passenger	10.1579	12.7639	4.1770[1]
Can listen to radio or tape	9.2105	7.0000	4.0066[1]

Wilks'Lambda = .684, p=.0002

[1] $p < .05$

[2] $p < .01$

SHOPPING/PERSONAL BUSINESS

Economy	10.0769	12.3480	4.1272[1]
Convenience	17.8205	15.6225	3.8623[1]
Brief travel time	16.2564	12.3330	11.5582[2]
Avoids traffic congestion	8.6154	11.2108	5.4687[1]
Flexibility	17.5897	14.2304	7.4282[2]
Low pollution per passenger	10.5385	13.1814	4.6589[1]
Low energy use per passenger	10.6410	12.9706	3.7454

Wilks' Lambda = .796, p = .003

[1] $p < .05$

[2] $p < .01$

Shopping/Personal Business Trips:

Of the 41 usable responses obtained from the leaders sample, 95 percent indicated they normally drive a car for shopping and personal business trips, and none indicated a bus. Ninety-seven percent also indicated they were generally satisfied with this mode. As with commuter trips, 5 percent (2 of 40) leaders indicated they would definitely switch to an improved public transportation system for shopping/personal business, which is again a smaller proportion of potential switchers than that observed (one-sixth) for the general adult respondents. Their configuration of leaders' determinant attributes again overlaps somewhat with that for the switchers in the general adult sample, but reasons for their lowered switching potential are implied by the omission of certain criteria and insertion of others which do not correspond to those for switchers.

Table A3 gives a ranking of the leaders determinance scores, of which 10 are deemed significant factors in modal choice decisions for shopping/personal business trips ($\alpha < .10$). Seven of these coincide with similarly stressed criteria for the switchers in the general adult sample, namely: convenience, flexibility, dependability, brief travel time, ease of travel with packages, freedom from repairs, and no parking problems. The addition of package-considerations is similar to its stress in these trips as rated by the target switchers in the general sample. However, compared to this target group, the leaders added as determinant attributes freedom from weather, privacy, and uncrowded conditions, while deleting the target group's criteria of low energy use, low pollution, and economy. This is similar to the phenomenon encountered in the commuter market, where energy/ecology, and economy are relatively less determinant for leaders, and features in which public transportation is perceived as inferior take their place.

The bottom of Table A2 provides comparisions between key discriminating modal choice criteria for these trips, as rated by leaders versus the entire general adult sample. As in the commuter sector, leaders' travel needs are again distinguishable from the general public, with a Wilks' Lambda statistic significant at $\alpha = .003$. The major discriminating criteria, shown in this portion of the table, indicate a lower leaders' stress on economy, avoiding

TABLE A3

LEADERS, DETERMINANCE SCORES AND MODAL COMPARISONS, SHOPPING/PERSONAL BUSINESS

RANK	ATTRIBUTE	Z VALUE
1	Convenience	6.282[1]
2	Flexibility	6.071[1]
3	Dependability	5.296[1]
4	Brief travel time	4.849[1]
5	Ease of travel with packages	3.181[1]
6	Freedom from weather	1.936[1]
7	Freedom from repairs	1.654[1]
8	No parking problems	1.325[2]
9	Privacy	1.325[2]
10	Uncrowded	1.278[2]
11	Safe from dangerous people	.996
12	Low energy use per passenger	- .296
13	Freedom from accidents	- .319
14	Low pollution per passenger	- .390
15	Pleasant riding surroundings	- .672
16	Economy	- .813
17	Ease of travel with children	-1.095
18	Smooth ride	-1.541
19	Listen to radio or tape	-1.708
20	Quiet ride	-1.541
21	Fun to drive	-2.034
22	Avoids traffic congestion	-2.152
23	Relaxing	-2.222
24	Socially acceptable transportation mode	-4.196
25	Ability to look at scenery	-4.290
26	Opportunity to socialize	-5.300
27	Ability to read	-5.347

[1] $p < .05$

[2] $p < .10$

traffic congestion, pollution and energy use, but greater stress on convenience, brief travel time, and flexibility. As mentioned above, differences in determinant attributes are most relevant (traffic congestion is relatively non-determinant for both groups, probably because all modes are seen as relatively subject to this problem), but the comparative criteria are still useful. Leaders generally seek a mix of transportation features that conforms less to public transportation than either the general public or the likely-to-switch sub-group. Many of these distinctions correlate with the demographic comparisons, which will be discussed next.

Demographics

Table A4 summarizes the comparisons of demographic profiles of the leaders with the general adult sample. Not surprisingly, the groups are highly distinct (Wilks' Lambda significant at α =.0000). With the exception of household size and two geographical shopping similarities (not real demographic variables, although of interest to public transportation routing), all demographic variables discriminate between the groups in expected directions. Relative to the general adult respondents, those identified as leaders are significantly more male (which is no surprise to the feminist movement), married, non-student, older, higher-educated, wealthy, own more cars, have lived longer in the community, work in the downtown area, and tend to shop downtown rather than the community pattern of greater mall patronage. The leaders are clearly from a generally distinct socio-demographic stratum, which explains a large part of their modal choice criteria discussed earlier, as well as their attitudes towards alternative means of financing public transportation. As discussed in the body of this report, leaders, even more than the general public, prefer riders to pay the "full costs" of public transportation, and are relatively even more negative than the general public towards "no-fare" and property-tax subsidies. Both groups' relative acceptance of gasoline-tax subsidies points towards a potentially viable form of transportation support. Whatever issues are presented for support from the community leadership, however, must take into account the demographic profile of this group. This will imply that

TABLE A4

DISCRIMINANT ANALYSIS, DEMOGRAPHIC PROFILES, LEADERS/GENERAL ADULTS

Variable	Leaders Mean	General Adults Mean	F-Ratio
Sex (1=M, 2=F)	1.0513	1.621	50.2227[2]
Marital Status (1=Single, 2=Married, 3=Other)	2.0256	1.836	3.7595[1]
Student Status (1=Full time student, 2=Part time student, 3=Not student)	3.00	2.6365	9.5312[2]
Age (1=<21, 2=21-29, 3=30-44, 4=45-59, 5=>60)	3.8462	2.8173	28.8457[2]
Household Size (1=1, 2=2, 3=3, 4=4, 5=5)	3.0769	2.8658	.9284
Education (1=Jr Hi, 2=Hi sch, 3=Hi sch grad, 4=College/Prof. train, 5=Coll. grad)	4.4615	3.7180	14.4722[2]
Income (1=<5,000, 2=5,000-9,999, 3=10,000-14,999, 4=15,000-19,999, 5=>20,000)	4.8205	2.5707	120.5528[2]
# of Autos (1=None, 2=1, 3=2, 4=3→)	3.2308	2.5728	22.9507[2]
Time in Austin (1=<6 mo, 2=6 mo-1yr, 3=1-3yr, 4=3-5yr, 5=5yr→)	4.7436	4.1738	8.4673[2]
Work Downtown (1=Yes, 2=No)	1.4359	1.9856	22.5573[2]
Shop Downtown (1=2/wk, 2=2-3/mo, 3=1/mo, 4=every 2-3mo, 5=almost never)	3.00	3.8189	11.5611[2]
Shop Highland Mall (same scale as above)	3.7949	3.2716	6.1901[1]
Shop Hancock Center (same scale as above)	3.7179	3.4689	1.4951
Shop Southwood Center (same scale as above)	4.641	4.4199	1.4919

[1] $p < .05$

[2] $p < .01$

Wilks' Lambda = .512, p = .000

spokespersons be demographically similar to the group,(thus probably spokesmen would be more effective), and that advertisements directed toward the general public (or to potential switchers) are not likely to appeal as strongly to the leaders. Support for public transportation programs may still be elicited from leaders by face-to-face interaction with influential community groups and business concerns, provided their personal and transportation needs are considered. Cities such as Atlanta, for example, have found it effective to appeal for public support of transit funding among low-potential riders by stressing the likelihood of getting people off the freeway if transportation is improved. Since many of the Austin leaders work downtown, lessening downtown congestion is also likely to receive some positive response. (The means proposed would be important, however, since banning cars from downtown would infringe on their personal prerogatives and fears of suburban shopping center dominance, whereas bus lanes and shorter headways would probably be greeted with more acceptance).

Media

For impersonal communication with leaders, the following media exposure data provides additional channels for promotional messages. Tables A5-A8 provide comparisons and absolute exposure levels for leaders' media accessibility and the general adult sample. As discussed in the media sections of this reports' body, specific time slot campaigns are too detailed for this report, and may vary depending on budget level and availability of "public service" time (particularly for T.V., although again production costs for commercials may also be a limitation). However, the same general points may again be noted in that absolute exposures for media slots should dominate when price is not a factor, whereas media slots that reach a disproportionate percentage of the target group (in this case, leaders) will generally be preferred when media are otherwise comparable on a cost per thousand basis.

As shown in Table A5, the leaders may be reached by messages placed in the general news section of the major local paper, followed by TV news programs, insertions near the business section of the paper, then the sports section, political group meetings and so forth. Given no budget problems

TABLE A5

RANKED GENERAL MEDIA EXPOSURE, LEADERS

Media Type	Percent Leaders	Percent General Adult
1. 1st section general news	100	81.17
2. TV news	78.05	65.69
3. Business section (newspaper)	78	16.32
4. Radio news	75.61	62.34
5. Sport section (newspaper)	68.29	28.87
6. Political groups	60.98	15.48
7. Easy listening music	60.98	35.56
8. TV sports	58.54	22.18
9. Church organization	56.1	33.47
10. TV movies	48.78	66.11

(free media and adequate budget for T.V. production costs), the specific time slots indicated in Table A6 might also be utilized in descending order of exposure frequency to the leaders' group. It appears that large numbers of leaders (and persons with similar demographic and attitude profiles) might be reached by messages placed in "prime-time" TV (all three major networks), 10 PM + TV (this channel and time-period imply Johnny Carson), as well as "easy-listening," drive-time AM (KLBJ-AM, 7-9AM) and evening FM (KASE-FM, 6-10 PM).

Table A7 provides data concerning the extent to which leaders differ from the general adult sample in terms of general media habits. The groups are quite distinct, for a Wilks' Lambda statistic obtained in linear discriminant analysis was significant at α =.0000. From a media allocation standpoint, one would tend towards media that are both discriminators across the groups and give a high percentage of leader-exposure. However, as noted above, relatively small leader-exposure media may be selected if costs vary with audience size, for this would tend to maximize effective exposures to leaders and influential voters per dollar of media expense. The specific time slot exposure differentials shown in Table A8 may be of particular operational value in narrowing the time periods for communications aimed at leaders in the community, although the general media data of Table A7 may aid in guiding selection of media types, particularly when programming for specific time slots changes over time.

In addition to the media selection aspects of communications campaigns aimed at leaders, the general and specific media differences between leaders and the general community suggest some appropriate message and life-style implications for this group. Table A7 paints a lucid picture of the leaders as relatively more exposed to print media and less with radio and television, especially during the day (they all work). Moreover, they appear to be (relative to the general public) sports enthusiasts--as spectators, however, since they are less likely to be on athletic teams (they are older, remember, and probably also more job-centered). The leader group also seems, differentially, to favor "easy-listening" music, to read about business, and to be highly active in political and church groups (leaders in some other regions of the country might be less likely to be active in the latter). Compared

TABLE A6

RANKED MEDIA SLOTS, LEADERS

		Percent Leaders	Percent General Adult
1.	KTBC-TV 6-10 pm.	65.85	49.37
2.	KTVV-TV 6-10 pm.	60.98	41
3.	KVUE-TV 6-10 pm.	48.78	41
4.	KLBJ-AM 7-9 AM	36.59	12.97
5.	KTBC-TV 10pm+	31.71	21.76
6.	KASE-FM 6-10 pm	24.39	4.18
7.	KTVV-TV 10 pm+	21.95	18.83
8.	KVUE-TV 10pm+	21.95	16.74
9.	KASE-FM 7-9 am	19.51	1.67
10.	KASE-FM 10 pm+	17.07	2.93
11.	KTVV-TV 7-9 am	17.07	6.28
12.	KLBJ-AM 6-10 pm	14.63	4.18
13.	KLRN-TV 6-10 pm	14.63	12.97
14.	KASE-FM 4-6 pm	12.2	2.51
15.	KLBJ-AM 12-4pm	12.2	5.4
16.	KLBJ-AM 4-6 pm	12.2	4.18

TABLE A7

DISCRIMINATING GENERAL MEDIA TYPES, LEADERS

	Percent Leaders	Percent General Adults	Probability
1. Read newspaper	2.5854	2.1339	.0015
2. Read magazines	2.3902	2.0921	.0378
3. Listen to radio	2.122	2.5523	.0064
4. Watch television	2.5366	2.8075	.0648
5. No newspaper	0%	12.13%	.0174
6. Read American Statesman	97.56%	73.64%	.0011
7. General news (1st section)	100%	81.17%	.0027
8. Sports section	68.29%	28.87%	.00
9. Women's section	4.88%	28.45%	.0016
10. Business section	78.05%	16.32%	.000
11. Dear Abby (Ann Landers)	19.51%	37.24%	.02959
12. Radio sports	41.46%	13.81%	.0001
13. Top 40 music	12.2%	32.64%	.0079
14. Classical music	9.76%	26.36%	.0201
15. Easy listening	60.98%	35.56%	.0024
16. TV sports	58.54%	22.18%	.0000
17. Children's TV	0%	8.79%	.0458
18. TV movies	48.78%	66.11%	.0312
19. Soap operas	0%	22.18%	.0011
20. Game shows	0	13.81%	.0108
21. No clubs or organizations	9.76%	38.49%	.0006
22. Church organizations	56.1%	33.47%	.0056
23. Political groups	60.98%	15.48%	.00
24. Athletic team	0	8.79%	.0458

Wilks' Lambda = .493, p=.0000

to the general public this group avoids women's sections, advice-columns, classical and top-40 music, childrens' TV, soap operas, game shows, and TV movies. Media exposure amplifies the leader's profile of being a conservative, pragmatic, hard-working, educated, but not highly intellectual power group.

Specific time slots that Table A8 presents as discriminators of the leaders versus general adult respondents tend to support this impression of attitudes and life-style. Leaders are significantly highly exposed to "easy-listening" music (KLBJ-AM during morning and afternoon drive-time; KASE-FM differentially popular with leaders all day), and underexposed to top-40 (KNOW-AM) and "progressive-rock" (KRMH-FM in evenings and late-night, called "Karma"). Leaders are thus "solid citizens" (only more so), and appeals for support of transportation improvements must consider their low-likelihood of patronage, and sensitivity to non-traditional methods of dealing with problems. Appeals based on maintaining the desirability of the community, decreasing congestion, and "fare share" of costs for users may be effective appeals, particularly in face-to-face encounters with individuals and political groups. Alternatively, it may be important to avoid depicting public transportation as appropriate only for young people, "liberals," and "disadvantaged," even though a large proportion of current and potential riders will be found among these groups. Switchers may respond positively to appeals based on their needs and demographic characteristics, but part of any campaign must indicate the relevance of public transportation for business commuting (both to lead to eventual inroads here and to rally support among non-riding leaders), as well as attractively presented to members of minority groups, older citizens, and so forth.

Summary

These tentative suggestions for promotional messages and advertising format are intended as starting points rather than definitive campaigns, which of course would require testing of ideas which may be generated by more intensive consideration of data such as that presented in this report and in the appendix. The body deals with recommended changes in determinant attributes for specific trip purposes, as seen by the target groups of

TABLE A8

DISCRIMINANT MEDIA SLOTS, LEADERS

		Percent Leaders	Percent General Adults	Probability
1.	KLBJ-AM 7-9 am	36.59	12.97	.0003
2.	KLBJ 4-6pm	12.2	4.18	.0332
3.	KLBJ 6-10 pm	14.63	4.18	.0076
4.	KNOW-AM	17.07	32.64	.0427
5.	KASE-FM 7-9	19.51	1.67	.0000
6.	KASE-FM 9-12	9.76	2.93	.0354
7.	KASE- FM 12-4	9.76	2.93	.0354
8.	KASE-FM 4-6	12.2	2.51	.0034
9.	KASE - FM 6-10	24.39	4.18	.00
10.	KASE-FM 10+	17.07	2.93	.0003
11.	KRMH-FM 6-10	0	10.04	.0318
12.	KRMH-FM 10+	0	8.79	.0458
13.	KTVV-TV 7-9am	17.07	6.28	.0166
14.	KTVV-TV prime	60.98	41	.0163
15.	KTBC-TV noon-4	0	10.04	.0318
16.	KTBC-TV 4-6	7.32	20.08	.0477
17.	KTBC-TV 6-10	65.85	49.37	.0483

potential switchers to public transportation, along with some suggested media strategies and financing priorities. This appendix has shown the extent to which the community leader data is similar to and different from both the target groups and the general adult community, in terms of determinant transportation features sought, demographics, and media exposure. Some suggestions are noted for potential gaps in perceived importance of transportation features and funding priorities between the general community and the relevant leaders of the community. While preferences may remain relatively fixed in the short-run, planning may be improved to the extent to which key groups are made aware of what is important and relevant to others. Those who wish to understand leaders priorities and influence them for support of transportation improvements may benefit from the specific data presented in this report, which may be analyzed in greater detail to aid in determining appropriate communication strategies and adaptations of public transportation systems to serve leaders' (or other groups') needs. More generally, the methods illustrated in this report and appendix may be modified and applied to gathering and analyzing data specific to other communities and time periods where a marketing approach to public transportation planning, modification, and support, may be fruitfully applied.

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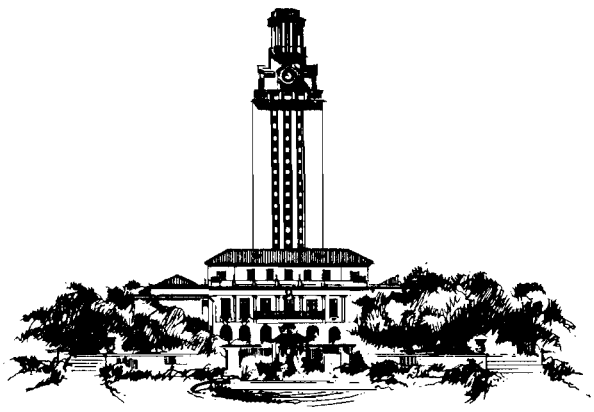

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